

3.7 SPECIAL-STATUS SPECIES – PLANTS AND WILDLIFE

3.7.1 AREA OF ANALYSIS AND METHODOLOGY

This section addresses special-status plants and wildlife. The study area for special-status plants consists of a minimum 500-foot wide study corridor. The study corridor for special-status wildlife consists of a minimum 2-mile wide study corridor (one mile on each side of the centerline). This section describes the regulations applicable to and the occurrence of special-status plants and wildlife in the study corridor and the methods used to obtain information on those species.

For the purposes of this EIS, the term “special-status species” includes species federally listed and proposed for listing as Threatened or Endangered, Candidate, Species of Concern, Nevada State Protected species, and Nevada BLM Sensitive Species. Special-status species are plant, wildlife, and fish species that are protected by the following regulations and policies:

- Listed or proposed for listing as threatened or endangered under the federal Endangered Species Act (50 CFR 17.11 [listed animals], 50 CFR 17.12 [listed plants], and various notices in the Federal Register for proposed species);
- Candidates for possible future listing as threatened or endangered under the federal Endangered Species Act (58 FR 188: 51144-51190, September 30, 1993); and
- Species protected in Nevada (wildlife: NRS 501.100 - 503.104; and plants: NRS 527.050 and NRS 527.260 - 527.300).
- Nevada BLM Sensitive Species (BLM Manual 6840)

Other special-status species are species that have “special-status” designations other than state or federal status as threatened, endangered, or candidate species. Special-status designations indicate species rarity, population declines, or threats to populations that may warrant special consideration or protection, which include:

- Federal species of concern (former federal C2 candidates); and
- Cacti, yuccas, and Christmas trees protected by Nevada state law (NRS 527.060-527.120).

REGULATORY FRAMEWORK

Federal Endangered Species Act

Pursuant to the federal Endangered Species Act (ESA) of 1973, the USFWS has authority over projects that may affect the continued existence of a species federally listed as Threatened or Endangered. If a development may affect a federally listed species, federal consultation under Section 7 of ESA is required. Under ESA, the definition of “take” includes to kill, harm, or harass any federally listed species. The USFWS has interpreted the definition of harm to include significant habitat modification.

Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act (16 USC 668) applies mostly to taking, hunting, and trading activities that involve any bald or golden eagle. The act prohibits the “taking” of any individuals of these two species, as well as any part, nest, or egg. The term “take” as used in the act includes “pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest, or disturb.”

BLM Policies

In Nevada, the BLM has implemented policies for special-status species found on BLM-managed lands. BLM's list of special-status species includes the following three categories: (1) federally listed as Threatened or Endangered, Proposed and Candidate species; (2) Nevada State Protected species; and (3) Nevada BLM Sensitive Species. Nevada State Protected species that meet BLM's 6840 (BLM 1988) policy definition includes a total list of 25 animal species and 13 plant species occurring on BLM-managed lands. The BLM affords these species the same level of protection as federal Candidate species. Nevada BLM Sensitive Species (BLM Manual section 6840.06 C [BLM 1988]) are not federally listed, nor state-listed, but the BLM affords them the same level of protection as federal Candidate species. BLM Sensitive Species are species for which population viability is a concern. Concern is warranted by a downward trend in population numbers, density, or habitat conditions that would reduce a species' existing distribution. The BLM is responsible for ensuring that its actions do not cause Sensitive Species to become Threatened or Endangered. Several special-status wildlife species listed later in this section are considered Sensitive Species by the BLM and are afforded protection.

Nevada Regulations

The State of Nevada does not have its own version of the federal Endangered Species Act. However, the NDOW has established a list of species that are declining in all or portions of their range within the State of Nevada. NDOW's listed species are "protected" under the authority of NRS 501.100 - 503.104 (wildlife), and NRS 527.050 and NRS 527.260 - 527.300 (plants). When these species occur within BLM-managed lands, the BLM affords them the same level of protection as federal Candidate species.

In addition, under the authority of NRS 527.060 to 527.120, it is unlawful to remove or damage cacti, yucca, and Christmas trees without written permission from the legal owner. However, NRS 527.090 states that "This section does not apply to necessary cutting or trimming of such plants if done for maintenance of electric transmission lines, telephone lines or other property of a public utility, or to a logging operation. (Added to NRS by 1957, 319; A 1961, 108; 1977, 780, 1167)." As applied, the regulations for cacti are applied to sensitive species of cacti. The regulations for Christmas trees apply to retail sales of Christmas trees (personal communication with John Christoferson, NDOW, June 22, 2000).

METHODOLOGY

Wildlife and vegetation surveys in the study corridor were conducted by Summit Envirosolutions, Inc. (SEI) and Tetra Tech EMI (1999, 2000). The affected environment for special-status plants and wildlife described below is based on those surveys. The field surveys were conducted during the spring and summer of 1999. In spring of 2000, an additional survey of the L re-route was performed. Additional surveys for active sage grouse leks were also conducted in the spring of 2000 and covered the ten route alternative segments (A through J) and the K and L re-routes.

The study corridor for special-status wildlife surveys extended a minimum of one mile on each side of the centerline and a minimum of 250 feet on each side of the centerline for special-status plant surveys. Additional information was provided by resource agency staff from the BLM, NDOW, and USFWS to identify the special-status plants and wildlife that may occur within the study corridor. A copy of the report on sage grouse is provided in SEI (2000). Two protocol-level surveys (i.e., in 1999 and 2000) for active sage grouse leks were conducted by helicopter one-half hour before sunrise and two hours after sunrise. The helicopter followed the centerline for all the route alternatives and searched for suitable habitat within 2.5 miles of the centerline. In addition, for the preparation of this EIS, current lists of special-status plants and wildlife were obtained from the USFWS on March 21, 2000, and from the BLM.

Information on special-status plant species occurrences in the study corridor was obtained from the USFWS, the Nevada Natural Heritage (NNHP) program, and the BLM to identify known occurrences and potential habitat of threatened, endangered, candidate, and other special-status plants that might occur along the proposed alternatives for the transmission line. This information is contained in the Falcon to Gonder 345 kV Transmission Line Vegetation Survey report (SEI and Tetra Tech EMI 2000). Additional information on plant species' habitat requirements, blooming periods, and field identifying characters was obtained from state (Kartesz 1983) and regional (Cronquist et al. 1986-1997, Abrams 1981) floras. Based on the information and a plant community survey conducted in May and July 1999, a list of special-status plant species potentially found in the study corridor was compiled. Known and reported occurrences of the special-status plant species were mapped on 7.5-minute quadrangle maps for field reference during surveys. Soils were identified and mapped for the study corridor using NRCS Soil Surveys (NRCS 1980a, 1980b, 1989, 1992, 1997, 1998). Nineteen potentially suitable habitat areas for the special-status plants were mapped during the plant community surveys.

The field surveys for special-status plant species, including cacti species, were performed at the optimum time for species identification, with the exception of Segment C and the K re-route. Additional surveys for special-status species should be conducted along the K re-route and portions of Segment C. Surveys conducted across the Cortez Mountains in Segment C were heavily grazed prior to the survey. The K re-route was added as a route to avoid impacts to historic resources. As a result, it was first surveyed in mid-July and was not included in the June 1999 special-status species surveys. The seasonal conditions were very dry, and most plants were not at peak time for species identification. A comprehensive survey including common and special-status plants should be conducted on the preferred route prior to construction.

Two known special-status plant occurrences reported by the NNHP were visited during the field surveys. This allowed surveyors to familiarize themselves with habitat and species identification. The plants located were Beatley buckwheat (*Eriogonum beatleyae*) in Horse Canyon and Pennell draba (*Draba pennellii*) at Hercules Gap. A third special-status plant occurrence, least phacelia (*Phacelia minutissima*), was reported in the Vininni Creek drainage, but the species was not located during the survey.

The pre-survey investigation found 10 special-status plant species with potential to occur in the study corridor (Table 3.7-1). None of these species are federally listed as endangered, threatened, or proposed for listing. Six species are federal species of concern, and 9 are considered sensitive species by the BLM. One species is listed by the State of Nevada as imperiled due to rarity or other factors.

TABLE 3.7-1: POTENTIAL SPECIAL-STATUS PLANT SPECIES IN THE STUDY CORRIDOR

Common Name	Scientific Name	Elevation (feet)	Habitat	Federal* & BLM Status	NNHP** G Rank, S Rank
Monte Neva paintbrush	<i>Castilleja saluginosa</i>	6,000-6,100	Hot spring, alkali soils	-- S	G1 S1
Pennell draba	<i>Draba pennellii</i>	6,200-10,000	Limestone rock outcrop	-- S	G2 S2
Nevada willow-herb	<i>Epilobium nevadense</i>	>7,400	Limestone talus and cliffs	-- S	G2 S2
Wind-loving buckwheat	<i>Eriogonum anemophilum</i>	5,500-10,000	Exposed ridges/slopes	SC S	G2/ G3 S2/ S3
Beatley buckwheat	<i>Eriogonum beatleyae</i>	5,600-7,800	Weathered slopes in clay	-- --	G2 S2
Lewis buckwheat	<i>Eriogonum lewisii</i>	7,000-9,000	Limestone rocky ridges	SC S	G3 S3
Least phacelia	<i>Phacelia minutissima</i>	6,000-7,000	Moist mountain slopes & flats	SC S	G3 S2
Parish's phacelia	<i>Phacelia parishii</i>	2,200-6,500	Desert alkali flats	SC S	G2/ G3 S2/ S3
Nachlinger catchfly	<i>Silene nachlingerae</i>	>9,000	Limestone soils	SC S	G2 S2
Rock violet	<i>Viola lithion</i>	7,800-10,500	Limestone rock crevices	SC S	G1 S1

*USFWS Categories for Listing under the ESA:
SC Species of Concern

BLM Species Classification:

S Sensitive
-- no listing

**NNHP Global (G Rank) and State (S Rank) for Threats/Vulnerability:

G Global rank indicator – worldwide distribution at species level
T Global trinomial rank indicator – worldwide no listing level
S State rank indicator at lowest taxonomic level

1. Critically imperiled, vulnerable to extinction due to extreme rarity, imminent threats, or other factors
2. Imperiled due to rarity or other factors
3. Vulnerable to decline, rare and local throughout its range, or within very restricted range

Source: SEI and TetraTech EMI 2000

3.7.2 AFFECTED ENVIRONMENT

An updated species list for the project is included in Appendix G.

DESCRIPTIONS OF SPECIAL-STATUS PLANTS

The following are brief habitat descriptions developed from database searches and state and regional flora for each of the ten special-status plant species identified as having potential to occur in the study corridor.

Monte Neva Paintbrush (*Castilleja saluginosa*) is known to occur in the Monte Neva Hot Springs area, in Steptoe Valley, approximately 20 miles north of McGill, White Pine County. The plant grows near hot springs in damp, alkali clay soils on hummocks and in shallow washes at elevations ranging from 6,000 to 6,100 feet. The plant flowers in June and July.

Pennell Draba (*Draba pennellii*) is known to occur in the South Fork of Berry Creek area, in the Schell Range of White Pine County. The plant grows in limestone rock outcrops, on slopes and ledges of the rock at elevations ranging from 6,200 to 12,000 feet. Pennell draba flowers from June to July. One population was located within the study corridor.

Nevada Willow-Herb (*Epilobium nevadense*) is known to grow in central and eastern Nevada on limestone talus and cliffs at elevations above 7,400 feet. Nevada willow-herb flowers from June to August. Suitable habitat was not located for this species. Most of the route alternatives are located in terrain below 7,000 feet.

Wind-Loving Buckwheat (*Eriogonum anemophilum*) is known to occur in the West Humboldt Range, Pershing County, to the Reese River Valley, Lander County, to the Jackson Mountain and the Sonoma Range in Humboldt County. It grows on exposed ridges and slopes on loose limestone gravel, volcanic soils, and diatomaceous and clay soils at elevations ranging from 5,500 to 10,000 feet. Wind-loving buckwheat flowers from June to September.

Beatley Buckwheat (*Eriogonum beatleyae*) is known to occur from Stewart Valley in northern Nye County, north to Horse Ranch Canyon, Eureka County, through Lander County, west to New Pass Range, Churchill County, and south to Mineral County. It grows on weathered ridgelines and slopes of gravel or clay soils with juniper at elevations ranging from 5,600 to 7,800 feet and flowers from May to August.

Lewis Buckwheat (*Eriogonum lewisii*) is known to occur from the Independence Mountains, to Elko Mountain, Elko County, and west to Mary's Mountain, Eureka County. It grows on exposed ridges in limestone soils and gravel at elevations ranging from 7,000 to 9,000 feet. Lewis buckwheat flowers from June to September.

Least Phacelia (*Phacelia minutissima*) is known to occur from Gold Creek and Stump Creek of the Independence Mountains in Elko County, NV and Owyhee County, ID. It grows on moist mountain slopes and open sunny flats in gravelly soils at elevations ranging from 6,000 to 7,000 feet. This plant flowers in July.

Parish's Phacelia (*Phacelia parishii*) is known to occur in the Muncy area and Steptoe Valley, White Pine County, to below the West Spotted Range at Mercury, south to Frenchman Flat, Nye County and alluvial flats and lakebeds in Clark County. It grows in alkaline soils on flats and alluvial slopes and valleys at elevations ranging from 2,200 to 6,500 feet. It flowers from April to July.

Nachlinger Catchfly (*Silene nachlingerae*) is known to grow in limestone soils in eastern Nevada on mountain slopes at elevations above 9,000 feet and may be found in flower from July to August. Suitable habitat for this species was not located. Most of the route alternatives are located in terrain below 7,000 feet.

Rock Violet (*Viola lithion*) is known from the White Pine and Pilot Ranges in White Pine County. This plant grows in the crevices of limestone outcrops at high elevations ranging from 7,800 to 10,500 feet. It flowers from June to August.

SPECIAL-STATUS PLANT OCCURRENCES

The affected environment for special-status plants is based on the special-status plant field surveys. Potential special-status plant species habitat locations and results of the surveys are summarized in Table 3.7-2. One species, Pennell draba, a BLM Sensitive species, was documented during the floristic surveys. The population and its habitat, limestone rock outcrop, was found within 200 feet to the north of the proposed centerline of Segment J at Hercules Gap. This population was a known occurrence reported by the NNHP. A photo of Pennell draba is provided in [Figure 3.7-1](#). A map of the Hercules Gap Pennell draba occurrence and habitat area is provided in [Figure 3.7-2](#).

TABLE 3.7-2: SPECIAL-STATUS PLANT SPECIES FIELD SURVEY RESULTS

Survey Area Name and Legal Description ¹	Survey Date	Species	Survey Results
The Geysers T31N, R48E, Sects 7,17	6/14/99	<i>Eriogonum anomophilum</i> <i>Eriogonum beatleyae</i>	No potential habitat and/or plant occurrence areas found.
Alkali flat T31N, T32N, R48E, Sects 33,4	6/14/99	<i>Phacelia parishii</i>	No plant occurrences found in potential habitat areas.
Cortez Canyon-east slope T26N, R47E, Sects 1,36	6/14/99	<i>Eriogonum anomophilum</i> <i>Eriogonum beatleyae</i>	No potential habitat and /or plant occurrence areas found.
Denay Valley-Garden Valley T25N, R50E, Sects 3,4,33,34	6/14/99	<i>Eriogonum anomophilum</i> <i>Eriogonum beatleyae</i>	No plant occurrences found within potential habitat areas.
Coffin Mtn – west slope Dry Creek T28N, R52E, Sects 27,28	6/14/99	<i>Eriogonum anomophilum</i> <i>Eriogonum beatleyae</i>	No plant occurrences found within potential habitat areas.
Sulphur Springs Range T27N, R53E, Sects 5,6,7,8	6/15/99	<i>Eriogonum beatleyae</i>	No potential habitat and/or plant occurrence areas found.
Garcia Flat to Railroad Pass T26N, R54E Sects 4,5,9,10,14,15,23,24	6/15/99	<i>Phacelia parishii</i> <i>Eriogonum beatleyae</i>	No potential habitat and/or plant occurrence areas found.
Black Mtn, Pinyon Range T27N, R53E Sects 5,8,9,16,15,23,25	6/17/99	<i>Eriogonum anomophilum</i> <i>Eriogonum beatleyae</i>	No potential habitat and/or plant occurrence areas found.
Huntington Valley T24N, R56E, Section n/a	6/15/99	<i>Eriogonum anomophilum</i> <i>Eriogonum beatleyae</i>	No potential habitat and/or plant occurrence areas found.
Buck Pass T22N, R57E Sects 18,19,20,28,29,32,33	6/15/99	<i>Eriogonum anomophilum</i> <i>Eriogonum beatleyae</i>	No plant occurrences found within potential habitat areas.
Beck Pass T21N, T20N, R57E Sects 3,4,33,34	6/15/99	<i>Eriogonum anomophilum</i> <i>Eriogonum beatleyae</i>	No plant occurrences found within potential habitat areas.
Butte Mountains T19N, R59E Sects 31,5,8,9,16,15,14	6/15/99	<i>Eriogonum beatleyae</i> <i>Draba pennellii</i> <i>Viola lithion</i>	No plant occurrences found within potential habitat areas.
Egan Range-Robinson Summit T18N, R60E, R61E, R62E Sects 15,14,24,19,20,21,22,26,25,30,29, 28	6/15/99	<i>Draba pennellii</i> <i>Viola lithion</i>	No plant occurrences found within potential habitat areas.
Egan Range/Smith Valley area T18N, T17N, R62E Sects 33,34,35,2,1	6/16/99	<i>Draba pennellii</i> <i>Viola lithion</i>	No plant occurrences found within potential habitat areas.
Hercules Gap T17N, R63E Sects 9,16	6/16/99	<i>Draba pennellii</i> <i>Viola lithion</i>	<i>Draba pennellii</i> habitat and plants found within approximately 200 feet north of Segment J.
Roberts Mtns/Mount Hope west slope T22N, R51E & R52E Sects 26,35,2,11,12	6/16/99	<i>Eriogonum anomophilum</i> <i>Eriogonum beatleyae</i> <i>Phacelia minutissima</i>	No potential habitat and/or plant occurrence areas found.
Muchacho Spring Newark Valley T19N, R55E, Sects 31,32,33	6/17/99	<i>Draba pennellii</i> <i>Viola lithion</i> <i>Eriogonum beatleyae</i>	No potential habitat and/or plant occurrence areas found.
Strahlenberg Mountain T19N, R54E Sects 7,8,17,16,21,22,27,26,36	6/17/99	<i>Draba pennellii</i> <i>Eriogonum beatleyae</i>	No potential habitat and/or plant occurrence areas found.

¹The legal description includes the portions of those sections intercepted by the proposed alternative routes.

Source: SEI, 1999

FIGURE 3.7-1: PENNELL DRABA



Pennell draba (*Draba pennellii*) population at Hercules Gap growing with *Petrophyton caespitosum*. Pennell draba plants have the darker green leaves and small white flowers on the right. *Petrophyton caespitosum* plants have light green leaves and erect flower stalks.

During the vegetation surveys, cacti species were encountered infrequently. They included Mojave prickly pear (*Opuntia erinacea*) and hedgehog thistle (*Pediocactus simpsonii* var. *simpsonii*), both considered common species. No additional special-status plant populations were found in areas surveyed for special-status plant species during the June 1999 surveys.

A partial list of plant species observed within the study corridor during surveys is provided in the Vegetation Survey report (SEI and Tetra Tech EMI 2000). The development of a comprehensive plant species list for the entire project was not included in the scope of the survey.

Descriptions of Special-Status Wildlife

This section describes special-status wildlife that might occur within the study corridor. Wildlife species that are federally listed or proposed for listing as Threatened or Endangered are described first. Candidate, USFWS Species of Concern, Nevada State Protected, and Nevada BLM Sensitive Species are also discussed.

Table 3.7-3 lists special-status wildlife that potentially occur within the study corridor, including 11 special-status birds, nine special-status mammals, one special-status fish, one special-status amphibian, and four special-status invertebrates.

Please refer to [Figures 3.7-3](#) and [3.7-4](#) for the location of special-status wildlife and their habitats within the study corridor.

FIGURE 3.7-2: HERCULES GAP PENNELL DRABA (*Draba pennellii*) AND HABITAT

**TABLE 3.7-3: SPECIAL-STATUS WILDLIFE KNOWN OR POTENTIALLY OCCURRING
WITHIN THE STUDY CORRIDOR**

Common Name	Scientific Name	Habitat	Status*	Potential for Occurrence	Segment
Birds:					
Bald eagle	<i>Haliaeetus leucocephalus</i>	Large bodies of water (e.g., rivers, lakes, reservoirs) for feeding, mature trees for roosts.	T	Could occur in the northernmost reaches of Diamond and Newark Valleys (wintering areas).	Potentially H and E
Mountain plover	<i>Charadrius montanus</i>	Shortgrass prairies.	PT	Not observed along the study corridor. No potential suitable habitat.	--
Sage grouse	<i>Centrocercus urophasianus</i>	Variable sagebrush habitats.	S	Sage grouse and their sign observed. 15 active leks observed along the study corridor in spring 1999. 13 active leks observed along the corridor in spring 2000.	B, C, D, E, F, G, and I Leks (1999) on B, C, D, E, F, G, and J
Ferruginous hawk	<i>Buteo regalis</i>	Open grasslands, sagebrush flats, desert scrub, low foothills, and fringes of pinyon-juniper habitat.	SC NP	Observed along the study corridor. Occupied and inactive nests located.	B, E, F, G, H, I, and J
Burrowing owl	<i>Athene cunicularia hypugae</i>	Open, dry grassland and desert habitats, and in grass, forb and open shrub stages of pinyon-juniper habitats. Abandoned mammal burrows, exposed rises.	SC NP	Several adult owls observed along the study corridor. Suitable habitat present.	B, C, D, I, and potentially A
Golden eagle	<i>Aquila chrysaetos</i>	Mountainous and hilly terrain. Generally nests on rock outcrops.	NP	Observed along study corridor. Active nests located.	A, C, E, and J Occupied nests A and E
Northern goshawk	<i>Accipiter gentilis</i>	In the Great Basin usually found in aspen stringers. Casual in northern deserts.	SC NP	No potential nesting suitable habitat but one foraging goshawk was observed along the study corridor.	F
Least bittern	<i>Ixobrychus exilis</i>	Emergent marsh vegetation.	SC	Not observed along the study corridor. Nesting habitat is present in Newark and Diamond Valleys.	--
White-faced ibis	<i>Plegadis chihi</i>	Emergent marsh vegetation.	SC NP	Not observed along the study corridor. The study corridor does not pass any large historic nest site.	--
Black tern	<i>Chlidonias niger</i>	Marshes, sloughs or wet meadows.	SC S	Not observed along the study corridor. Typically found along Humboldt River 10 miles upstream of study corridor.	--
Swainson's hawk	<i>Buteo swainsoni</i>	Agricultural valleys with cottonwood, elm or other suitable nest trees	NP	Observed flying 1.5 miles from the project area. Nests were not located	Potentially D and B
Mammals:					
Pygmy rabbit	<i>Brachylagus idahoensis</i>	Stands of basin big sagebrush on alluvial fans.	SC	Potential suitable habitat present.	E and J
Preble's shrew	<i>Sorex preblei</i>	Riparian/ shrub/ grass.	SC	Potential suitable habitat present.	Potentially E

**TABLE 3.7-3: SPECIAL-STATUS WILDLIFE KNOWN OR POTENTIALLY OCCURRING
WITHIN THE STUDY CORRIDOR (CONT.)**

Common Name	Scientific Name	Habitat	Status*	Potential for Occurrence	Segment
Spotted bat	<i>Euderma maculatum</i>	Roosts in cliff faces, feeds in variable habitats.	SC NP	Potential suitable habitat present, but the study corridor is not near known roosting sites.	--
Small-footed myotis	<i>Myotis ciliolabrum</i>	Roosts in rock outcrops feeds in shrublands.	SC S	Potential suitable habitat present, but the study corridor is not near known roosting sites.	--
Long-eared myotis	<i>Myotis evotis</i>	Roosts in buildings and caves bark high elevations.	SC S	Potential suitable habitat present, but the study corridor is not near known roosting sites.	--
Fringed myotis	<i>Myotis thysanodes</i>	Roosts in caves, adits, buildings, and high elevations.	SC S	Potential suitable habitat present, but the study corridor is not near known roosting sites.	--
Long-legged myotis	<i>Myotis volans</i>	Roots trees, crevices buildings.	SC S	Potential suitable habitat present, but the study corridor is not near known roosting sites.	--
Pale Townsend's big-eared bat	<i>Corynorhinus townsendii pallescens</i>	Roosts in caves and feed in Pinyon-juniper.	SC S	Potential suitable habitat present, but the study corridor is not near known roosting sites.	--
Townsend's big-eared bat	<i>C. townsendii townsendii</i>	Roosts in caves and feed in Pinyon-juniper.	SC S	Potential suitable habitat present, but the study corridor is not near known roosting sites.	--
Fish:					
Lahontan cutthroat trout	<i>Oncorhynchus clarki henshawi</i>	Cool-water lakes and streams, pools with well vegetated and stable streambanks.	T	The study corridor is not near potential suitable habitat.	--
Amphibians:					
Spotted frog	<i>Rana luteiventris</i>	Cold permanent water habitats, marshy edges of ponds or lakes.	C	Although potential suitable habitat present, not observed along the study corridor.	--
Invertebrates:					
Mattoni's blue butterfly	<i>Euphilotes rita mattoni</i>	Variable –nectar plant buckwheat species.	SC S	Potential suitable habitat present.	Potentially all segments
Grey's silverspot butterfly	<i>Speyeria atlantis greyi</i>	Cool forest, near streams and wet meadows at elevations from 8,500 to 10,000 feet.	SC S	No potential suitable habitat present in the study corridor.	--
Nevada viceroy	<i>Limenitis archippus labontani</i>	Willow stands for larvae.	SC S	Potential suitable habitat present but not observed along the study corridor.	Potentially A
California floater	<i>Anodonta californiensis</i>	Freshwater streams/rivers with slack water.	SC S	No potential suitable habitat present.	--

***USFWS Categories for Listing under the ESA:**

E Endangered PT Proposed Threatened
T Threatened C Candidate
SC Species of Concern

BLM Species Classification:

S Nevada BLM Sensitive Species
NP Nevada State Protected species

Source: SEI 2000

SPECIES FEDERALLY LISTED OR PROPOSED FOR LISTING AS THREATENED OR ENDANGERED

Special-Status Birds

Bald Eagle (*Haliaeetus leucocephalus*). The bald eagle, federally listed as Threatened, frequents northern Nevada, including White Pine and Eureka counties during the winter. According to Herron et al. (1985), traditional wintering areas extend from northern Eureka east to Ely, including Diamond, Newark, and Long Valleys. Valley areas in Nevada with large populations of black-tailed jackrabbits typically support congregations of wintering eagles (Herron et al. 1985). The study corridor does not cross traditional wintering areas, except for the northernmost reaches of Diamond and Newark Valleys. Neither bald eagles nor potential roost sites were located during the surveys. Potential roost sites are presumed to be located near the cottonwood stands adjacent to ranches in both valleys or within the pinyon-juniper woodlands located away from the study corridor.

Mountain Plover (*Charadrius montanus*). The mountain plover, a federally Proposed Threatened species, is a rare migrant in the Great Basin (Ryser 1985). Mountain plovers nest east of the Great Basin in the open, high plains region of Colorado and Wyoming. Shortgrass prairie habitat is the preferred nesting habitat. Although according to the USFWS letter (File No. 1-5-99-SP-183), mountain plovers have been sighted in Diamond Valley near Eureka, these birds are not thought to have nested in Diamond Valley. Mountain plovers were not observed during the field surveys. The study corridor does not traverse through or near potential suitable habitat in Diamond Valley.

Special-Status Fish

Lahontan Cutthroat Trout (*Oncorhynchus clarki henshawi*). The Lahontan cutthroat trout is a federally listed Threatened species. This subspecies is native to lakes and streams throughout the physiographic Lahontan basin of northern Nevada, eastern California, and southern Oregon. The trout inhabits lakes and streams and requires spawning and nursery habitat characterized by cool water, pools in proximity to cover and velocity breaks, well-vegetated and stable streambanks, and relatively silt-free rocky substrate in riffle-run areas (USFWS 1995). According to the USFWS letter dated April 6, 1999 (File No. 1-5-99-SP-183), the Lahontan cutthroat trout occurs on the west side of Roberts Mountain in Birch and Pete Hansen Creek and Trout Creek on the west side of the Pinyon Range, all in Eureka County. The route alternatives do not cross or traverse near these creeks.

Route alternatives do cross historic habitat for metapopulations of the Lahontan cutthroat trout (LCT). U.S. Fish and Wildlife Service Recovery Plans for Threatened Species require analysis for the restoration and recovery of species in areas where they currently do not exist but may sustain a viable population. Henderson Creek is a tributary to the Humboldt River via Pine Creek and is therefore considered historic habitat for the LCT (Coffin and Cowan 1995). It is also considered a potential creek for the recovery of the LCT (personal communication with M. Haworth, Biologist with the U.S. Fish and Wildlife Service, September 17, 2001).

Two segments of the route alternatives cross Henderson Creek. Segment F crosses the creek first near its headwaters (Township 23N, Range 51E, Section 26), then again downstream of Alpha Ranch, just west of private land. The upper reach of Henderson Creek is approximately one foot in width and has flowing water, approximately one inch deep. The bottom of the creek has small gravel and supports a narrow band of riparian vegetation (i.e., *Juncus balticus* and *Carex* spp.). Where Segment F again crosses Henderson Creek further downstream, and depending on the time of year, little to no flow exists in the creek, even after the creek acquires water from Vinini and Frazier creeks. It may be that Alpha Ranch or some other ranch diverts these flows for irrigation. Two channels exist at this crossing near Alpha Ranch; one is clearly an irrigation ditch, the other apparently the main channel of Henderson Creek. Segment B crosses Henderson Creek further down stream of the Segment F crossings. Conditions found

at this crossing, which is the confluence of Henderson and Pete Hansen Creeks in Garden Valley, is flowing water with narrow bands of willows with other riparian vegetation.

CANDIDATE, USFWS SPECIES OF CONCERN, NEVADA STATE PROTECTED, AND NEVADA BLM SENSITIVE SPECIES

Special-Status Birds

Sage Grouse (*Centrocercus urophasianus*). Sage grouse (Figure 3.7-3), a Nevada BLM Sensitive Species, may be petitioned for listing as federally Threatened, Endangered, or Candidate species due to a decline in populations throughout their range. Sage grouse are generally associated with sagebrush-dominated rangelands, from the plains to the mountains, preferably where big sagebrush (*Artemisia tridentata tridentata*, *vaseyana*, and *wyomingensis*) provides 15 to 40% of the ground cover (Ryser 1985, Dobkin 1995). Furthermore, the combination of big sagebrush and low sagebrush communities provides the habitat structure for different reproductive stages of the sage grouse. During the cycle of the year, the grouse utilize sagebrush for food and cover.

A few components are necessary for the sagebrush communities to provide adequate habitat. Habitat variation in the form of mosaics appears to be critical since the birds require diversity among the sagebrush for their seasonal lifecycle (Dobkin 1995). Grouse may move 50 miles or more throughout the year, occupying areas with exposed sagebrush during winter (USFS 1991). Vegetative species diversity (e.g., forbs and grasses) and canopy cover also play critical roles in habitat adequacy. The literature on sage grouse reflects this diversity by the variation of percent canopy cover for brush, forbs, and grasses as well as for plant height and density. Little data have been published on grouse specific to Nevada, and the numbers given in this document reflect the variations in the published literature.

In spring, males prefer relatively open, rather than dense, sagebrush cover for strutting grounds. Strutting grounds (or leks) are usually located at a point intermediate between the winter and summer range (Klebenow 1985). Each male establishes a territory or court on the lek where he displays.

Located in openings or clearings in sagebrush or in areas where the sagebrush is low and scattered (e.g., grasslands, disturbed sites, low sagebrush), the territories on a lek are used only for display and mating. Strutting grounds range in size from those with only a handful of males to those with 400 or more (Ryser 1985). Most of the leks within the study corridor are located in stands of black sagebrush (*A. nova*) or openings within big sagebrush. Big sagebrush stands adjacent to the leks should have a canopy cover of 15-40% with a similar canopy cover of herbaceous plants and grasses, with the vegetation height being at least 20 cm tall. Females use this vegetative component for nesting and early brooding (BLM 1999b, Schroeder 1999, Dobkin 1995).

Winward (1991), a researcher with the Oregon State University, found that optimum sage grouse nesting habitat consists of sagebrush 16 to 32 inches tall with a canopy cover from 15-25%, and an herbaceous understory of at least 15% grass canopy and 10% canopy forb cover that is at least 7 inches tall. Ideally, these vegetative components should be on 80% of the breeding habitat for a population of sage grouse. Winward also indicated that when the canopy cover exceeds 15% in Wyoming big sagebrush and 20% total for basin and mountain big sagebrush, grass and forb constituents decrease due to competition for resources with shrubs. Therefore, these optimal numbers may not be attainable depending on the condition of an existing sagebrush community.

After the sage grouse chicks are several weeks old, mesic areas, preferably within 2 miles of the leks, are utilized for brood-rearing and adult habitat during the summer months (Ryser 1985). Riparian meadows, especially high elevation meadows adjacent to sagebrush cover, are preferred. The presence of trees near the riparian meadows is considered a detracting factor of habitat quality due to the potential for raptor predation

or the lack of suitable vegetative components. Grouse consume the leaves and buds of the more protein-rich forbs and grasses found in these riparian areas. Young grouse supplement this herbaceous diet with a variety of insects (Ryser 1985). When mesic areas are inaccessible or unsuitable, hens with broods will use sagebrush habitats with a more open canopy cover (10-25%) with the requisite forb and grass understory (Martin 1970, Wallestad 1971). Some researchers suggest that grasses and forbs have a canopy cover of at least 15% (Sveum et al. 1998). The diversity of vegetation provides the comparable protein-rich food source.

Fall habitat is defined as a mixture of low sagebrush and Wyoming big sagebrush. Sage grouse winter habitat is defined as Wyoming big sagebrush with canopy cover greater than 15% occurring either as large stands or mixed with stands of low or black sagebrush (Back 2000b). Sage grouse consume only sagebrush in the winter months; consequently, access to sagebrush is critical. Therefore, suitable winter habitat is largely determined by snow depth. Other important habitats include drainages with vigorous big sagebrush (Wyoming and basin big sagebrush) that is consistently available during severe winters (BLM 1999b). Topographic variation in the form of ridges with wide benches also adds to the quality of winter habitat.

Following survey protocol for sage grouse, helicopter surveys revealed locations of 15 active leks in spring 1999 (see Figure 3.7-3 for locations). After the 1999 surveys, sections of the proposed line segments were relocated farther away from active leks to provide 3,000 feet (0.6 mile) of separation (Figure 3.7-3). Eight of the active leks are located within 2 miles of the centerline. According to Braun (1995), a 2-mile radius is generally considered to define the core breeding complex (FERC 1995). Figure 3.7-3 shows a 2-mile radius for each active or historic lek location. Historic lek locations are documented in the NDOW Statewide Digital Database from 1960 to 1994. This database contains all historic leks recorded by resource specialists during these years.

Many of these historic leks have not been active for years. These leks are not active for one of two reasons: either the grouse populations are so low that there simply are not enough numbers to occupy all leks, or some habitat component has changed or is lacking. Unsuitable habitat could be the result of human impacts such as roads, mines, transmission or fence lines, or a vegetative component such as a closed sagebrush canopy or little suitable brood habitat (Back 2000b). Approximately 32 historic leks within 2 miles of the study corridors have not had activity for the past 2 years. For a more detailed description of findings on sage grouse, please refer to the spring 1999 and spring 2000 sage grouse surveys (SEI 2000).

Following survey protocol for sage grouse, additional helicopter surveys revealed locations of 12 active leks in spring 2000 (see Figure 3.7-3 for locations). Of the 12 active leks observed within 2.5 miles of the centerline, only four were new active leks compared to the 1999 surveys. Two of the new active leks (leks 14 and 15) sighted might be new locations of three active leks (leks 6, 7, and 8) sighted during the 1999 surveys. The wildfire that burned during August 1999 altered the vegetation near leks 6, 7, and 8. Based on the habitat conditions, it is highly likely that the birds from the previously sighted leks relocated nearby (Back 2000a). According to BLM resource staff, Jake's lek (lek 15 recorded in 1999, Segment J) located in Jake's Valley was recorded as an active lek complex during BLM's spring 2000 surveys (personal communication with Perkins, Ely BLM Field Office, 2000). Therefore, a total of 13 active leks may be accounted for in the spring 2000 data.

Ferruginous Hawk (*Buteo regalis*). The ferruginous hawk (Figure 3.7-4), a USFWS Species of Concern and a Nevada State Protected species, inhabits the open sagebrush grasslands of central and eastern Nevada (Ryser 1985). Nest sites are normally located at the interface between pinyon or juniper woodland and open sagebrush. Nest trees typically overlook broad expanses of open sagebrush or grassland from which the hawks hunt ground squirrels and rabbits. Ferruginous hawks nest in the tops of isolated trees and sometimes on rock outcrops or even on the ground on ridges overlooking valleys

(Snyder and Snyder 1991). In central Nevada, ferruginous hawks almost always select nest sites in juniper trees at the interface between pinyon-juniper and sagebrush/grassland habitats (Herron et al. 1985). A pair of ferruginous hawks typically constructs and maintains two or more nests relatively close to each other and might alternate use of the nests from year to year (Herron et al. 1985; Snyder and Snyder 1991). Nest building occurs in March and April with egg laying in April. The young fledge in June or July.

Ferruginous hawk nests that were identified in the study corridor during the 1999 Baseline Wildlife Survey are shown in [Figure 3.7-4](#). The survey report prepared by Summit Envirosolutions (2000) recorded their status as being occupied, inactive (unoccupied), or potentially occupied (these sites contain nest structures or pairs of birds observed in potential suitable habitat). The nests were typically built in juniper trees. [Figure 3.7-4](#) also outlines ferruginous hawks nesting territories in the project study area, which are based on historic nest data and input provided by NDOW and BLM wildlife specialists.

Two distinct areas in the study corridor are used by relatively large numbers of ferruginous hawks (as determined by the presence of occupied and inactive nests identified during the 1999 Baseline Wildlife Survey): 1) the west-facing slopes of the White Pine Range (East of Pancake Summit Quad); and 2) the east-facing slope of the Whistler Mountains (Whistler Mountain Quad). The latter location contained the largest number of occupied nests. Pairs of birds were seen on the east- and west-facing areas of the Dry Hills area (Rocky Hills and Dugout Spring Quads), although few nests were located there. Nests on the west-facing slopes are atypical as they are not situated at the lower end of pinyon or juniper woodlands.

The BLM's Ely Field Office provided maps of known ferruginous hawk territories and written input regarding ferruginous hawk use in the study corridor of the proposed Buck Mountain route alternative (Segment E). According to their data, ferruginous hawk territories are situated along Dry Mountain and the west flank of Buck Mountain, and habitat is present along the base of Roberts Mountain. Similarly, the BLM's Battle Mountain Field Office provided a map showing locations of ferruginous hawk nests that have been identified in previous years on both the west and east sides of Whistler Mountain. This historic data is reflected in the ferruginous hawk nesting territories outlined in purple in [Figure 3.7-4](#). Because ferruginous hawks use alternate nest sites and sometimes rotate amongst these sites over a period of several years, the NDOW manages all historic or inactive sites as potentially suitable habitat for nesting ferruginous hawks.

Burrowing Owl (*Athene cunicularia*). The burrowing owl, a USFWS Species of Concern and a State of Nevada Listed Species, is a small ground-nesting owl typically inhabiting relatively open shrub and agricultural lands throughout the Great Basin. It is found in desert washes, alkali scrub, desert riparian/riverine habitats, fields, grazing land, and cut banks along roads and washes (Ryser 1985). Burrowing owls nest in abandoned mammal burrows (e.g., ground squirrel, badger, and kit fox), which they enlarge and excavate (Herron et al. 1985; Ryser 1985). This species has a tendency to form breeding colonies of up to 12 pairs (Ryser 1985).

Sixteen adult owls were observed in the project surveys, and the location of these owls mapped ([Figure 3.7-4](#)). Most of the observed owls were within one mile of the centerline. According to Herron et al. (1985), locations where high populations of burrowing owls have been noted include the area south of Beowawe to Cortez, east of Beowawe to Highway 278, and then south to a point approximately 30 miles north of the town of Eureka. This area corresponds with the sites where burrowing owls were recorded during the surveys conducted for the Falcon to Gonder project.

FIGURE 3.7-3: SAGE GROUSE LOCATION MAP

FIGURE 3.7-4: SPECIAL-STATUS WILDLIFE LOCATION MAP

Golden Eagle (*Aquila chrysaetos*). The golden eagle, a State of Nevada Listed Species, inhabits mountainous or hilly terrain and hunts over open country for small mammals, snakes, birds, and carrion. Mate selection begins in late January and February. Pair bonds are generally assumed to last until one mate dies. Golden eagles construct nests in steep cliffs or in tall trees (Smith and Murphy 1985). Their nests are large, bulky structures constructed from sticks that measure up to two inches in diameter, which are interwoven with smaller sticks, brush, and miscellaneous vegetation (Herron et al. 1985). Two occupied golden eagle nests were found (Figure 3.7-4). Golden eagles were also observed soaring or perched along the route alternatives.

Swainson's Hawk (*Buteo swainsoni*). The Swainson's hawk, a State of Nevada Listed Species, is a summer resident of Nevada and can be observed in the state from April through October. Nesting activities begin in April and May when the hawks arrive in their nesting territories. A pair usually returns to the nesting territory used the previous year and would often reuse the old nest if it is still available. Nests are usually in cottonwood or elm trees located in agricultural valleys, but have also been found in a variety of vegetation, including buffaloberry, serviceberry, willow trees, sagebrush, and aspen. Nests have also been located on the ground where suitable nesting habitat is lacking. The elevational range of the nest sites is from 4,000 to 6,500 feet. According to Herron et al. (1985), known nesting areas include the area north of Beowawe, both west and east along the Humboldt River and Interstate 80 corridors. Swainson's hawk were observed at three locations but nests were not located.

Northern Goshawk (*Accipiter gentilis*). Preferred habitat for the northern goshawk, a USFWS Species of Concern and a Nevada State Protected species, consists of older-age coniferous, mixed, and deciduous forests (USFS 1988). In Nevada, a typical nest site is located in an aspen stringer about 600 feet long by 75 feet wide and is placed near a small perennial stream at approximately 7,400 to 7,800 feet in elevation (Herron et al. 1985). Typically, nest trees are aspens and are located on benches or basins surrounded by much steeper slopes (Call 1979). Nesting activities extend from March through August (USFS 1992). In most areas, the northern goshawk occupies montane forests in spring and summer, with some altitudinal migration into foothills and valleys in the winter.

Only one observation of a goshawk was recorded in the study corridor. The bird was less than 0.25 mile west of the centerline near a spring (Garden Pass Quad). Suitable nesting habitat is present more than 5 miles west of the centerline in Roberts Mountain. The study corridor does not cross potential suitable nesting habitat of aspen.

Least Bittern (*Ixobrychus exilis hesperis*). The least bittern, a USFWS Species of Concern, is a small, secretive, marsh-dwelling heron, which prefers dense, emergent vegetation. According to NDOW (personal communication with Podborny, NDOW, 1999), this species has not been recorded in the study corridor. Potential nesting habitat is present near springs located on private land in Newark and Diamond Valleys. The study corridor (Mooney Basin Summit Quad) does pass within 0.25 mile east of one potential site, the Warm Springs Ranch. In 1999, two sightings of this species in Ruby Lake and along the Humboldt River were reported, both several miles away from the study corridor. However, least bitterns were not detected during the surveys for this project.

White-Faced Ibis (*Plegadis chihi*). The white-faced ibis, a USFWS Species of Concern and a State of Nevada Listed Species, is a summer nesting resident in the Great Basin, although a few are known to occasionally over winter. Suitable nesting habitat in the Great Basin consists of emergent marsh vegetation, with tules preferred (Ryser 1985). White-faced ibises are colonial nesters and often nest in mixed colonies with herons and egrets. The study corridor does not pass the large historic nest sites. The closest historic nest site is Ruby Lake, more than 30 miles to the northeast. Flocks of foraging ibises have been observed in Diamond and Newark Valleys, but their nesting locations are not known. Ibises were not observed during the 1999 surveys.

Black Tern (*Chlidonias niger*). The black tern, a USFWS Species of Concern and Nevada BLM Sensitive Species, is a common to uncommon nesting inhabitant at Great Basin marshes (Ryser 1985). Black terns nest on the ground, often in loose colonies. Typical nesting habitat is in marshes, sloughs, and wet meadows. Within the study corridor, black terns are found only along the Humboldt River, but more than 10 miles upstream from the crossing between the centerline and the Humboldt River. Occasional sightings are made in Ruby Valley and other isolated valleys. Black terns were not observed in the study corridor.

Special-Status Mammals

Pygmy Rabbit (*Brachylagus idahoensis*). The pygmy rabbit is a USFWS Species of Concern. The geographic range of the pygmy rabbit includes most of the Great Basin and adjacent areas of the Intermountain West. This species is typically associated with clumped stands of Basin big sagebrush where soils are usually deep and friable (Orr 1940; Jansen 1946; Wilde 1978; Weiss and Verts 1984). They occur most frequently on plains and alluvial fans dominated by basin big sagebrush (Green and Flinders 1980). Dense scrub cover helps the rabbits avoid predators and provides additional food resources (Jansen 1946; Wilde 1978). Pygmy rabbits dig relatively shallow burrows, usually in aggregations near the base of sagebrush bushes (Jansen 1946).

Pygmy rabbits were identified in two locations (Cold Creek Ranch NW Quad and Marking Corral Summit Quad). Pygmy rabbit burrows are shown in [Figure 3.7-4](#). The study corridor does not cross these sites, and the latter site is located 2 miles north of the centerline. Potential habitat was found in areas crossed by and in the study corridor.

Preble's Shrew (*Sorex preblei*). The Preble's shrew, a USFWS Species of Concern in Elko County, has been collected in a diversity of habitats. In Nevada, the Preble's shrew was recorded from sagebrush-grassland dominated by big sagebrush, bluebunch wheatgrass, and Thurber's needlegrass (Hoffman and Fisher 1978); from seasonally wet, sagebrush-dominated communities characterized by big sagebrush, rubber rabbitbrush, and antelope bitterbrush; and from habitats characterized by perennial streams with willows, Wood's rose, greasewood, and Great Basin wildrye (Ports and George 1990).

Preble's shrew occurs in northeastern Nevada, Elko County (Ports and George 1990). Some specimens were collected near Sheep Creek, which drains the Independence Range (34 miles north of Elko) and in the perennial willow and wild rose of the Mary's River (54 miles northeast of Elko). The southernmost record for Preble's shrew is from the south shore of Great Salt Lake, Utah (Tomasi and Hoffman 1984). For the Falcon to Gonder project, potential suitable habitat is present in portions of approximately 12 miles of Segment E through Elko County. However, no Preble's shrew were identified along the study corridor during the surveys.

Special-Status Bats

The study corridor passes by some historic mine sites that are currently being expanded (e.g., Cortez Mine). Bats usually inhabit caves, but because there are not a large number of existing caves in the study corridor, inactive mine sites provide potential habitat for bats (personal communication with Bradley, NDOW, March 30 and August 11, 1999). The Alligator Ridge area (Segment E), located approximately 3 miles northeast of the centerline, provides potential roosting habitat for bats. Most sites are located several miles south of the study corridor in the Sulphur Spring Range, although one site is located less than 1.5 miles south. Potential roosting habitat for special-status bats in natural rock features such as cliffs and large rock outcrops is located in Hercules Gap, Segment J, Ruth Quad; and the K re-route, Cortez Canyon Quad, which traverses near and over numerous large rock outcrops in pinyon-juniper habitat. NDOW's data on bat roosting sites are not available to the public unless a project is located near known roosting sites. Because the proposed transmission line is not located near known roosting sites, NDOW will not provide information on their specific locations. According to NDOW, the study

corridor does not overlap with known maternity or hibernation roosts (personal communication with Bradley, NDOW, March 30 and August 11, 1999).

Surveys for bats were not conducted because of the potential for disturbance to roosting bats. In particular, the K re-route is the only segment that passes directly over a rock outcrop. Other segments may pass within one mile of rock outcrops but do not traverse outcrops.

Bat species that do not form large nursery colonies or utilize adits or caves for summer roosting may roost at any locale, whether it is beneath a rock, under tree bark, in a rodent burrow, or within a rock crevice. Bat species such as the spotted bat (*Euderma maculatum*) or the western pipistrelle (*Pipistrellus hesperus*) are such species. Little is known of the spotted bat; however, the western pipistrelle apparently occupies similar habitat and has received more research efforts. The western pipistrelle has been reported to occur in the study corridor (personal communication with Gary Back, consultant, July 10, 2000). It should be noted that just because rock outcrops exist, it does not necessarily indicate presence. For example, a study for the presence of the western pipistrelle was conducted in Utah in areas where there was an abundance of crevices (potential roost sites); only a very few provided adequate protection from predators and/or provided thermal cover (Tuttle 1996).

Spotted Bat (*Euderma maculatum*). The spotted bat, a USFWS Species of Concern and a Nevada State Protected species, has been found in a variety of habitats including ponderosa pine forest, pinyon-juniper forests, desert scrub, and open pasture and hay fields (Leonard and Fenton 1983). They are found most often in dry, rough desert terrain (Watkins 1977). Spotted bats roost alone in rock crevices high up on steep cliff faces. Critical roosting sites are cracks and crevices from 0.8 to 2.2 inches in width in limestone or sandstone cliffs (USFS 1991). Spotted bats feed mainly on moths. Spotted bat populations may be limited by the availability of suitable roosting sites. They are generally found in remote, undisturbed areas, suggesting that they may be sensitive to human disturbance (USFS 1991). According to NDOW resource staff, occurrence of spotted bats along the study corridor is unlikely because there are no known breeding or roosting colonies in the area (personal communication with Bradley, NDOW, April 11, 2000). However, spotted bats could potentially roost in the rock outcrops along the study corridor.

Small-Footed Myotis (*Myotis ciliolabrum*). The small-footed myotis, a USFWS Species of Concern and a Nevada BLM Sensitive Species, inhabits a wide variety of habitats over its range, but mostly in forest areas, including pinyon-juniper. When suitable roost sites are available, this species is found in semiarid shrublands, sagebrush, chaparral, and even agricultural areas (Manning and Jones 1989). In Nevada, specimens have been collected over mountain streams fringed with deciduous trees (Hall 1946). Their known elevational range is from sea level to 8,500 feet. This species is an opportunistic insect-eater (Davis 1939). Small-footed myotis could potentially roost in the rock outcrops along the study corridor.

Long-Eared Myotis (*Myotis evotis*). The long-eared myotis, a USFWS Species of Concern and a Nevada BLM Sensitive Species, occurs in coniferous forests of high mountains. This species roosts in small nursery colonies of 10 - 30 bats in buildings, caves, mines, and under tree bark (Whitaker 1980). Potential suitable habitat for this species is present in and along the study corridor in the higher elevation pinyon-juniper habitat.

Fringed Myotis (*Myotis thysanodes*). The fringed myotis, a USFWS Species of Concern and a Nevada BLM Sensitive Species, primarily occurs at middle elevations (3,700 to 6,500 feet) in desert, grass, and woodland habitats, but is found to 8,500 feet in spruce-fir habitats in New Mexico (O'Farrel and Studier 1980). Roost sites have been found in caves, old buildings, and mine tunnels. This species feeds primarily on beetles. According to NDOW resource staff, fringed myotis are rare in the study corridor (personal communication with Bradley, NDOW, April 11, 2000). However, fringed myotis could potentially roost in the rock outcrops along the study corridor.

Long-Legged Myotis (*Myotis volans*). The long-legged myotis, a USFWS Species of Concern and a Nevada BLM Sensitive Species, is mainly a coniferous forest bat, although it may also be found in riparian and desert habitats in some areas. This species uses a variety of roosts including trees, crevices, and buildings. It occupies an elevational range from 200 feet to more than 10,000 feet, but is most often found between 6,000 to 9,000 feet (Warner and Czaplewski 1984). Caves and mine tunnels are used as hibernacula (Schowalter 1980). According to NDOW resource staff, this species occurs in the study corridor, but there is no evidence that roosting does occur in the study corridor (personal communication with Bradley, NDOW, April 11, 2000). Potential suitable habitat for this species is present along the study corridor.

Pale and Pacific Townsend's Big-eared Bat (*Corynorhinus townsendii pallescens*; *C. townsendii townsendii*). The Pale and Pacific Townsend's big-eared bats are both USFWS Species of Concern and Nevada BLM Sensitive Species. They occur in juniper-pine forests, shrub-steppe grasslands, deciduous forests, and mixed coniferous forests from sea level to 10,000 feet in elevation (USFS 1991). These species roost primarily in caves or cave analogs such as old mine shafts, but have also been known to use rocky outcrops and old buildings (Pierson et al. 1991). In winter, most individuals roost singly, although some form clusters of a few to several dozen individuals. In summer, females roost with their young in nursery roosts in warm parts of caves. Maternity colonies break up in August. Males and non-breeding females roost alone (Kunz and Martin 1982). These species are considered very sensitive to human disturbance. Entering into a nursery roost can cause abandonment of the site by a colony. According to Pierson et al. (1991) and Brown and Berry (1991), mine shafts and adits are the most important roosting habitat for western big-eared bats and other sensitive bat species and should be protected from human disturbance where possible. According to NDOW resource staff, both subspecies of bats have been known to occur in the study corridor, but sightings have been poorly documented and there is no evidence that roosting occurs in the study corridor (personal communication with Bradley, NDOW, April 11, 2000). Potential suitable habitat for this species is present along the study corridor.

Special-Status Amphibians

Spotted Frog (*Rana luteiventris*). The spotted frog, a federal Candidate species, is a large brown frog that emerges in March from winter hibernation in bottom mud (Morris and Tanner 1969). Eggs are laid in late spring and larvae transform by September. Spotted frogs appear to require cold water. They are most commonly found near permanent water in habitats such as the marshy edges of ponds or lakes, in algae-grown overflow pools of streams, and near springs with emergent vegetation. In spring and summer, the spotted frog may move considerable distances from water after breeding, often frequenting mixed conifer and subalpine forests, grasslands, sagebrush, and rabbitbrush. It is thought that spotted frogs hibernate in holes near springs or other areas where water does not freeze and is constantly renewed (USFS 1991). Although potential habitat is present, spotted frogs, larvae, or eggs were not observed in the study corridor.

Special-Status Invertebrates

Mattoni's Blue Butterfly (*Euphilotes rita mattoni*). The Mattoni's blue butterfly, a USFWS Species of Concern and a Nevada BLM Sensitive Species, is found primarily in the upper and lower Sonoran Zones, prairies, and sand dunes (Scott 1987). It has also been found in pinyon-juniper woodlands and rolling prairie grasslands (Pyle 1981). The host plant for the larvae is the buckwheat (*Eriogonum microthecum nutt. var. laxiflorum*), which is widely distributed and occurs from 5,000 to 10,500 feet in elevation. It flowers from June through October. This species of buckwheat was identified in most of the segments. Therefore, Mattoni's blue butterfly could inhabit these areas. The adult Mattoni's blue butterfly is usually active in July. Although numerous species of butterflies were observed including blues, the host plant was not observed in those areas. This species of butterfly must be distinguished from close relatives by

microscopic examination, which was not done. Butterflies were not collected for examination because the blues were not seen near the host buckwheat.

Grey's Silverspot Butterfly (*Speyeria atlantis greyi*). The Grey's silverspot butterfly, a USFWS Species of Concern and a Nevada BLM Sensitive Species, inhabits cool, forested elevations from 8,500 to 10,000 feet (Howe 1975). It occurs in openings of wildflowers among deciduous and coniferous forests and along streams or in moist meadows (Pyle 1981). Violets (*Viola* spp.) are the only known host plants for butterflies in the genus *Speyeria*. The distribution of these plants limits the available habitat the butterfly can occupy. Females lay their eggs on substrates in proximity to the violets (Brittnacher et al. 1978). This species has been recorded in the Ruby Mountains and the East Humboldt Range in Elko County, but no records of its occurrence in the study corridor were found. Violets are present in the route segments. However, this species of butterfly could not occur within the study corridor because there is no suitable habitat given the elevation requirements.

Nevada Viceroy (*Limenitis archippus labontant*). The Nevada viceroy, a USFWS Species of Concern and a Nevada BLM Sensitive Species, occurs mainly along the Humboldt River and lower tributaries, with additional colonies near the cities of Fallon and Fernley. The Nevada viceroy is only found in the immediate vicinity of willows, which are the larval host plant. Potential habitat for this species is present where the study corridor crosses the Humboldt River. Other Lepidopteran larvae were noted in this area, including the larvae for mourning cloaks and fritillaries. However, adults or larvae of the Nevada viceroy were not observed during the field surveys.

California Floater (*Anodonta californiensis*). The California floater, a USFWS Species of Concern and a Nevada BLM Sensitive Species, is a freshwater species of mussel historically occurring in unpolluted Pacific lakes and streams of Washington, Oregon, California, Idaho, Nevada, and Utah (Bequaert and Miller 1973). Colonies are most commonly found in still or slow-moving water such as the leeward side of river oxbows (Taylor 1981). It can only survive in association with certain fish that serve as hosts for the mussel's parasitic life stage. The California floater was once abundant in the Humboldt River. Currently, the California floater is present in the North Fork of the Humboldt River but not in the central portion of the river (personal communication with Bradley, NDOW, March 30 and August 11, 1999). The study corridor crosses the central portion of the Humboldt River. The confluence of the North Fork with the Humboldt River is located east of the town of Elko, over 30 miles away.

3.7.3 ENVIRONMENTAL CONSEQUENCES

This section discusses the potential impacts of the Falcon to Gonder project related to special-status plants and wildlife. The significance criteria, impact mechanisms, and approach for assessing adverse effects to special-status plant species are similar to those described in Section 3.4, Vegetation, and Section 3.6, Wildlife and Wildlife Habitat.

The general effects of the project on special-status plants would be similar to those discussed in Section 3.4, Vegetation. However, because of the plants' rarity, such effects can have more significant impacts to special-status species populations and habitats.

Overall, impacts to special-status wildlife species would be similar to those impacts discussed in Section 3.6, Wildlife and Wildlife Habitats. The main impacts to common wildlife include wildlife habitat disturbance, habitat fragmentation, and increased human access. However, similar impacts can have greater effects on special-status species since their distribution and abundance can be limited and their habitats are often rarer. The impacts to special-status wildlife are addressed in two categories. General impacts (i.e., impacts common to route alternatives) and mitigation measures are discussed first, followed

by an impact discussion by route alternative. Where appropriate, additional site-specific mitigation is described for species occurrence in particular segments.

SIGNIFICANCE CRITERIA

Project construction and operation activities would have a significant impact on special-status species if they would:

- Substantially reduce the distribution or abundance of any species identified as federally Threatened or Endangered, Candidate, Species of Concern, Nevada State Protected, or Nevada BLM Sensitive Species.
- Result in substantial temporary or permanent loss or alteration of the habitat of federally Threatened or Endangered, Candidate, USFWS Species of Concern, Nevada State Protected, or Nevada BLM Sensitive Species that affects the distribution or abundance of those species.

ENVIRONMENTAL IMPACTS – COMPARISON OF ALTERNATIVES

Impacts Common to Route Alternatives

☐ ***Impact Special-Status Species-1: Possible Disturbance of Special-Status Plants***

Construction, operation, and maintenance activities could result in the disturbance of special-status plant species. These disturbance activities could potentially reduce local populations of special-status plant species. No special-status plant species populations were observed during surveys in Segments A through I. Only one population of a special-status plant was located during the field surveys. Pennell Draba is located at Hercules Gap (Segment J) within the rock outcrops. Segment J is common to all route alternatives. Significant impacts to the Pennell draba population and its habitat would be avoided and mitigated to a less-than-significant level by implementing the Mitigation Measure Special-Status Species-1, listed below.

Plant populations can vary and appear or disappear from one year to the next. In addition, surveys in Segment C and the K re-route were not possible during the optimal period for plant identification. Surveys conducted across the Cortez Mountains in Segment C were heavily grazed prior to the survey. The K re-route was surveyed in mid-July after being added as an alternative, and most plants were not at peak time for species identification. Proposed access roads, material yards, or staging areas outside of the 500-foot study corridor were not surveyed. All access roads, material yards, and staging areas would require botanical surveys to be conducted prior to any ground disturbance. No significant impacts are anticipated for special-status plants within Segments A-I. However, a comprehensive floristic survey would be conducted once a preferred alternative is selected. At that time, all proposed ground disturbance areas for that alternative would be surveyed. If special-status plants are located within the corridor, adjacent to access roads, or other areas of disturbance, impacts to special-status plants and their habitat would be avoided and mitigated to a less-than-significant level by implementing Mitigation Measures Vegetation-1, and-4, and the mitigation measure listed below.

☐ ***Mitigation Measure Special-Status Species-1: Avoid Adverse Effects on Special-Status Species During Construction and Project-Related Activities***

A comprehensive survey would be conducted prior to construction and project-related activities to identify any new special-status species populations, including Pennell draba or any other special-status species. Qualified biologists would mark exclusion zones prior to construction

around identified populations. Exclusion zones would have a minimum 20-foot radius, would be marked in the field with stakes and flagging, and would be located on drawings in the COM Plan. All construction-related activities would be prohibited within these zones, including vehicle operation, material and equipment storage, and other surface-disturbing activities.

The remainder of this section describes impacts to special-status wildlife that could be associated with any of the route alternatives. The following eight special-status species would not be impacted from the development of the project because of the absence of suitable habitat in the study corridor: mountain plover, least bittern, white-faced ibis, black tern, spotted frog, Grey's silverspot butterfly, and California floater. In addition, no significant impacts are expected to the seven special-status bats that might occur in the study corridor because the proposed transmission line would not be located near known roosting sites (personal communication with Bradley, NDOW, April 11, 2000). Bat Conservation International (BCI) was contacted with regards to potential effects of electromagnetic fields (EMF) generated by the transmission line. BCI was not aware of research on EMF and bat sonar. It is the opinion of BCI that there should not be effects unless the transmission line directly crosses a roost site (personal communication with French, BCI, July 10, 2000). However, potential impacts during construction activities might occur to more solitary species such as the spotted bat or the long-legged myotis.

Swainson's Hawks: Although Swainson's hawk nests were not found during the wildlife surveys, nesting in the study corridor is a possibility (SEI 2000). A single bird hunting from a perch on the ground in Segment B (Pete Hanson Creek Quad), less than 1.5 miles north of the centerline, was observed during field surveys, and another Swainson's was noted flying in the same area. A pair of Swainson's hawks were observed in Segment D (Mineral Hill NW Quad), approximately 1.5 miles east of the centerline during the field surveys. It is possible that the observed hawks were nesting in the study corridor, although nests were not found.

□ ***Impact Special-Status Species-2: Potential Impacts to Swainson's Hawks***

Although Swainson's hawk nests were not found during the wildlife surveys, nesting in the study corridor is a possibility (SEI and Tetra Tech EMI 2000). Hawks were observed in the study corridor, and it is possible that the observed hawks were nesting in the project area. Swainson's hawks may be directly impacted from removal of nest trees if their nests are located near the centerline. Or, they may be indirectly impacted from the noise and general construction activities, which could cause displacement of adults and nest abandonment. Both impacts would be considered significant, but could be mitigated to less than significant by the measure below.

□ ***Mitigation Measure Special-Status Species-2***

To avoid disturbance to nesting Swainson's hawks, a qualified biologist, acceptable to NDOW and BLM, would conduct pre-construction surveys along the proposed line. If Swainson's hawk nests are identified along the proposed route, SPPC would avoid any construction activities within a 0.5-mile radius from any occupied Swainson's hawk nest during the nesting season, from April 15 through August 1 (BLM 1992). Occupied or inactive Swainson's hawk nests would not be removed during construction activities.

Burrowing Owls: Sixteen adult burrowing owls were observed within the study corridor. Nine burrowing owl burrows, one potential burrow, and a large colony were identified within one mile of the study corridor as shown on Table 3.7-4 and Figure 3.7-4. Nine burrows are located within 0.25 mile of existing roads; some of these roads are proposed to be used as access roads for construction.

TABLE 3.7-4: BURROWING OWL BURROWS SIGHTED ALONG THE STUDY CORRIDOR (SPRING 1999 AND SPRING 2000 DATA)

Number of Burrows	General Location of Burrows	Segment
9	Burrows within 1 mile of the centerline	C, D, L
Large colony	Burrows located 2.25 miles northeast of centerline	B
Total = at least 11		

Source: SEI 2000

□ Impact Special-Status Species-3: Impact to Burrowing Owl Burrows

Short-term direct impacts are anticipated to nesting burrowing owls from implementation of the project. During construction, burrowing owl burrows may be crushed by construction equipment using the existing access roads or new temporary spur roads. This impact would be considered a significant impact and would require mitigation. Burrowing owls may also be displaced and abandon their burrows as a result of increased human activities within the 500-foot study corridor. Burrowing owls may leave their burrows if they are close to existing access roads, new temporary spur roads, the transmission line centerline, or the construction staging areas. However, this would not be considered a significant impact due to the availability of adjacent lands that may contain potentially suitable habitat. This adverse impact may be lessened further by implementing the following mitigation measure.

□ Mitigation Measure Special-Status Species-3

Conduct pre-construction surveys to identify occupied burrows. All active burrows would be flagged by a qualified biologist prior to the beginning of construction. During construction activities, burrows near existing access roads that may require improvements, new temporary spur roads, construction staging areas, or the centerline would be avoided to prevent them from being crushed. During the construction period, areas within 150 feet of all active burrows would be classified as “no drive zones” (i.e., no construction or other vehicles would be permitted within these areas).

Golden Eagles: Two occupied golden eagle nests and one inactive golden eagle nest were identified within one mile of the centerline during the field surveys, as shown on Table 3.7-5 and Figure 3.7-4. One golden eagle nest is within 0.25 mile of an existing access road that could be used during construction.

TABLE 3.7-5: GOLDEN EAGLE NESTS SIGHTED ALONG THE STUDY CORRIDOR (SPRING 1999 DATA)

Number of Nests	Status and General Location of Nest	Segment
2	Occupied nests within 1 mile of the centerline	E
1	Inactive nest within 1 mile of the centerline	B
Total = 3		

Source: SEI 2000

□ Impact Special-Status Species-4: Impact to Golden Eagle Nests

Golden eagles may be displaced and abandon their nests as a result of construction activities along the study corridor. This impact is considered significant but could be mitigated to less-than-significant.

❑ **Mitigation Measure Special-Status Species-4**

SPPC would avoid any construction activities within a 0.5-mile radius from any occupied golden eagle nest during the nesting season, from February 15 through July 15 (personal communication with Perkins, BLM, May 15, 2000). Although all golden eagle nests located were in rock outcrops, there is the potential for nests to be located in trees. Removal of nests or trees containing any occupied or inactive golden eagle nest would be avoided during construction activities. To avoid disturbance to unidentified golden eagle nests, a qualified biologist, acceptable to NDOW and BLM, would conduct pre-construction surveys along the proposed route.

Pygmy Rabbits: Pygmy rabbits were identified in two locations, in Segment E and Segment J as shown on Table 3.7-6 and Figure 3.7-4. The study corridor does not cross these sites, and the latter site is located 2 miles north of the centerline. However, an existing access road that could be used for project construction passes within 300 feet of one pygmy rabbit den. Although potential habitat was found in areas crossed by and in the study corridor, evidence of pygmy rabbits was not found. Potential impacts to pygmy rabbits are detailed below.

**TABLE 3.7-6: PYGMY RABBIT BURROWS SIGHTED ALONG THE STUDY CORRIDOR
(SPRING 1999 DATA)**

Number of Burrows	General Location of Burrows	Segment
1	Burrow within 1 mile of the centerline	E
1	Burrow within 1-2 miles of the centerline	J
Total = 2		

Source: SEI 2000

❑ **Impact Special-Status Species-5: Impact to Pygmy Rabbit Burrows**

Potential indirect impacts to rabbits in burrows could occur as a result of increased human activities along the study corridor. Pygmy rabbits could be hurt or killed and their burrows crushed during construction activities. Even a burrow located relatively far away (e.g., within one mile from the centerline) could be adversely affected by increased traffic during construction.

❑ **Mitigation Measure Special-Status Species-5**

SPPC would conduct pre-construction surveys along the selected route to identify occupied pygmy rabbit burrows. All active burrows would be flagged by a qualified biologist prior to the beginning of construction. During construction activities, pygmy rabbit burrows near existing access roads that require improvements, new temporary spur roads, construction staging areas, or the centerline would be avoided to prevent them from being crushed. During the construction period, areas within 150 feet of all active burrows would be classified as “no drive zones” (i.e., no construction or other vehicles would be permitted within these areas).

Bald Eagles: According to NDOW (Herron et al. 1985), the study corridor traverses traditional wintering areas along the western edge of Diamond Valley near the base of Whistler Mountain for approximately 14 miles (Devon Peak and Whistler Mountain Quads) and the northernmost reaches of Diamond Valley for approximately 3 miles (Sadler Basin and Garcia Flat Quads). In Newark Valley, which encompasses Newark Lake, the study corridor traverses mapped habitat north of Buck Pass for approximately 7 miles (Mooney Basin Summit and Cold Creek Ranch Quads). However, the study corridor falls on the edge of all these mapped areas. Neither bald eagles nor potential roost sites were located in the study corridor during the surveys.

Low densities of bald eagles winter in and migrate through northern Nevada. Potential roost sites are located within cottonwood stands growing mainly on ranches in northern Nevada, although according to NDOW no notable concentrations of eagles occur close to the proposed project. Additionally, communal roosts are more commonly located in higher elevation limber pine (personal communication with Peter Bradley, NDOW non-game biologist, October 2, 2001). Segment E (of the Buck Mountain route alternative) has potential roosting sites approximately four miles south of where the route crosses Garcia Flat in the northernmost portion of Diamond Valley. Where Segment E crosses into the northern end of Newark Valley, ranches located 3.5 to 4 miles south of the route alignment may provide roosts. The majority of hunting opportunities in both valleys along Segment E lie further south of these potential roosts, although eagles may scavenge and hunt black-tailed hare anywhere they occur.

Segment H (of the Crescent Valley (b) and Pine Valley (b) route alternatives) parallels the western edge of southern third of Diamond Valley. Potential roosts are located over 8 miles north with suitable foraging approximately 7 miles north. The southern quarter of Diamond Valley has greater densities of ranches and people, which may deter the eagles from roosting to some degree. However, the southern part of the valley would provide plenty of opportunities for scavenging roadkill. Additionally, bald eagles occasionally have been noted in Dunphy and Beowawe in the winter.

As stated in Section 3.6, Impact Wildlife-5: Potential Bird Electrocutions and Collisions (page 3.6-14), the likelihood of electrocution to eagles is low, as the average wing-span of both golden and bald eagles generally do not exceed 10 feet and the distance between conductors is 22 feet. In terms of the threat of electrocution at the two substations, SPPC has had no reports of avian electrocution at substations for stations over 100 kV (personal communication with John Berdrow, project manager, SPPC, 2001). This finding is supported by a Cornell University study where six utility companies indicated 99% of animal caused faults occurred on low voltage substations (Enck and Brown 1989). High voltage substations (i.e., 230 and 345 kV) require greater distances between insulators and other electrical components than do smaller voltage substations. For example, the distance vertically from insulators and steel support structures vary from just under 7 feet to nearly 9 feet. The horizontal distances between phases are well over 15 feet. The likelihood of larger birds getting inside the substation is also very remote due to the complexity of the support structures, wires and insulators of the stations.

Collisions with transmission lines can occur; however, diurnal raptors are less prone to such collisions. For further discussion on this, please refer to page 3.6-15. Although bald eagles may fly near or over the transmission line while migrating and hunting, the alignments are not in close proximity to roost sites. In areas where the transmission line would cross concentrations of waterfowl or shore birds (i.e., Humboldt River), flight-diverters would be placed as stated under Mitigation Measure Wildlife-5.

Adverse impacts to bald eagles, direct or indirect, are not anticipated as a result of the proposed project.

Impact Special-Status Species-6: Potential Impact to Bald Eagles

If wintering or migrating bald eagles are hunting within the project area during construction or maintenance activities, bald eagles may leave the disturbance area and forage elsewhere. Construction-related noises, traffic, or other human activities would likely keep the eagles from hunting near the project corridor while these actions are taking place. However, these impacts are not considered significant as the study corridor falls on the edge of NDOW mapped bald eagle winter foraging areas and the study corridor does not provide suitable roosting sites, potential perches and generally does not provide adequate foraging habitat (i.e., too dry). Therefore, mitigation measures are not necessary.

Northern Goshawk: Only one observation of a northern goshawk was recorded in the study corridor. The bird was less than 0.25 mile west of the centerline near a spring (Segment F; Garden Pass Quad). In

general, the project area does not provide suitable habitat for nesting or foraging for goshawks; the observed bird was likely a fly-over. Because suitable nesting habitat is present more than 5 miles west of the centerline in Roberts Mountain and the study corridor does not cross potential suitable nesting habitat of aspen, no significant impacts to the northern goshawk are expected from implementation of the project. No impacts are anticipated, and no mitigation measures would be necessary.

Sage Grouse: Potential impacts to sage grouse may result from the construction and operation of the project. Potential impacts include habitat disturbance to sage grouse breeding and brooding ranges, and winter and summer ranges. Disruption of seasonal movements or habitat fragmentation could occur through increased raptor predation or harassment near leks. Sage grouse may also perceive the towers as potential predatory bird perches near lek areas and abandon the lek site. Mitigation efforts that can be incorporated into the design or construction of the transmission line are considered on-site mitigation and are detailed in the discussion for each segment. In instances when on-site impacts cannot be avoided or mitigation is inappropriate, off-site mitigation is proposed.

Impacts to active leks would be considered significant. Pre-construction and construction activities could adversely affect sage grouse mating activities in those active leks. The construction of the transmission line in previously undisturbed habitat may introduce potential impacts in the following three ways. Hall (In press) determined three potential impacts to sage grouse from implementation of transmission lines: (1) harassment and/or direct predation of adult sage grouse by raptors and ravens using poles as perches; (2) direct predation (mostly by ravens) of nests, young, and nesting females in proximity to leks; and (3) the reaction of sage grouse in leks to the presence of visible perches. Raptors included mostly golden eagles, but also ferruginous hawks, prairie falcons, northern harriers, red-tailed hawks, and rough-legged hawks.

Hall (In press) found that direct collisions of sage grouse with overhead lines or collisions were minimal compared to impacts from poles as raptor perches. However, sage grouse may fly greater distances during harsh winter conditions, flying from areas where suitable forage is accessible to higher elevation snow roosts. During these periods of inclement weather and low visibility, all avian species have a greater chance of colliding with a transmission line.

A potential impact resulting from the introduction of an overhead transmission line into occupied sage grouse habitat is due to the potential for raptors to use the support structures for hunting perches and nest sites. Raptors can prey on sage grouse from these vantage points. Corvids (e.g., ravens and crows) also use the structures for nest building, thereby increasing the population of these species. Like raptors, the corvids can also use the structures as hunting perches, primarily to locate sage grouse ground nests when the hen leaves the nest. As a result of increased raptor or corvid populations and/or predation, sage grouse leks near transmission lines are often abandoned.

Increased raptor and corvid use of the support structures for nesting or as hunting perches can result in increased predation at leks, nesting habitat, brood habitat, and winter habitat (Back 2000a). In addition, sage grouse may perceive tubular steel H-frames as potential predator perches and could leave that lek if a tower is located nearby. According to Braun, sage grouse would abandon habitat within 0.5 mile of either side of a transmission line centerline (Braun 1997) because transmission line structures may provide potential raptor perches, which cause sage grouse to abandon suitable habitats. Impacts to all historic and active sage grouse leks are detailed below in the discussion for each route alternative segment.

Many factors enter into account when increased predation or harassment occurs as a result of a transmission line in an area. The shorter the distance between the active lek and the transmission line, the more effective raptors can be in either preying upon or harassing birds during breeding activity. The direction from the transmission line to the active lek may also be a factor. Leks located west of a

transmission line provide for the early morning sun to be at the predator's back and directly on the strutting ground, making it difficult for sage grouse to see the predator, but making the sage grouse highly visible to the raptor. The opposite situation occurs when the lek is east of the transmission line. The background of the view from the lek to the transmission line may also influence the effectiveness of the predator. A transmission line with a mountain range in the background would tend to camouflage a raptor, whereas a transmission line silhouetted against the sky would tend to accent the position of the raptor. The slope and aspect where a lek is located relative to the transmission line also need to be considered. A lek located on a slope that faces away from the transmission line is not visible to the perched raptor, depending on the distance to the line and height of the support structure.

The topography between the transmission line and the lek is also a factor determining the impact of the transmission line. Any land feature that interrupts the line of sight effectively hides the lek from a perched predator. These factors do not make a lek immune from predation, but they can reduce the frequency of hunting forays and provide a sense of security that sage grouse may not have when in full view of the transmission line. Consequently, it cannot be equivocally stated that an active lek within some distance from a proposed transmission line would be affected following the construction of the transmission line (Back 2000b). However, the recently published Management Guidelines for Sage Grouse and Sagebrush Ecosystems in Nevada (BLM 2000) singles out transmission lines to be located at least 2 miles from breeding, nesting, brood-rearing, and winter habitat.

In general, habitat fragmentation may be defined as either a reduction of total amount of habitat type or of all natural habitat in a landscape, or the apportionment of remaining habitat into smaller, more isolated patches. A variety of intrusions have fragmented sage grouse habitat either by physically removing habitat or creating physical or perceived barriers. Agricultural activities, land conversion, roads, reservoirs, mines, fences, and transmission lines may all contribute to habitat fragmentation. A transmission line may fragment habitat by providing a perceived barrier (i.e., a perched raptor or the perception of a perched raptor) and reducing sage grouse security, which in turn, may result in a decline of normal movement in and around leks, brooding, or wintering habitats (Braun 1998). The lines and towers themselves may also provide a physical barrier during times when grouse may fly distances, especially during daily movements between high and low elevations in winter months.

Linear habitat fragmentation is generally associated with roadways that create a more delineated physical barrier. Transmission lines are difficult to compare with road features if they do not permanently remove vegetation, or provide a frequent travel corridor for humans and predators. Because of this, habitat fragmentation as a result of a transmission line may be difficult to qualify or quantify. Perch deterrents, if effective, may mitigate impacts as a result of a perched raptor, but may not mitigate the perceived potential harassment of a raptor. As discussed above, topography plays a significant role in whether perceived predation exists or not. The same may be said for habitat fragmentation. If the transmission line is potentially a barrier to the migratory movements, it would be directly related to the spatial arrangement of the seasonal habitats in relation to the transmission line placement.

Access road improvements are not considered to be a significant impact for the majority of the leks as the roads already exist and they could be restored to their pre-construction condition or closed where necessary per the BLM's direction. However, two leks are immediately adjacent to or within existing access roads that may require improvements. These impacts are discussed under that particular segment. Material yards are not within suitable habitat; therefore, they are not anticipated to have impacts to sage grouse or their habitat.

Following survey protocol for sage grouse, helicopter surveys revealed locations of 15 active leks in spring 1999 as shown on Table 3.7-7 and [Figure 3.7-3](#).

**TABLE 3.7-7: ACTIVE LEKS SIGHTED ALONG THE STUDY CORRIDOR
(SPRING 1999 DATA)**

Number of Active Leks	General Location	Segments
3	Located 1 mile or less from the centerline	F, B, E
5	Located 1-2 miles from the centerline	C, B, E
1	Located 2-3 miles from the centerline	G
6	Located 3-5 miles from the centerline	C, D, J
Total = 15		

Source: SEI 2000

Following survey protocol for sage grouse, additional helicopter surveys revealed locations of 12 active leks in spring 2000 as shown on Table 3.7-8 and Figure 3.7-3. In total, 13 active leks may be accounted for the spring 2000 data.

**TABLE 3.7-8: ACTIVE LEKS SIGHTED ALONG THE STUDY CORRIDOR
(SPRING 2000 DATA)**

Number of Active Leks	General Location	Segments
6	Located 1 mile or less from the centerline	B, E
6	Located 1-2 miles from the centerline	B, C, E, F, G
1	Located 2-4 miles from the centerline	J
Total = 13		

Source: SEI 2000

□ Impact Special Status Species-7: Impacts to Sage Grouse

Potential impacts to sage grouse that may result from the construction of the transmission line include: disturbance to sage grouse breeding and brooding ranges, winter range, and summer range from construction, operation, and maintenance; increased predation and/or harassment of sage grouse from birds of prey perching on the transmission line towers; and habitat abandonment due to sage grouse reaction to potentially intimidating visual effects of the line. The following mitigation measures may be used to help minimize these impacts.

□ Mitigation Measure Special Status Species-7a (Disturbance to Active Leks)

Pre-construction and construction activities near the active lek areas identified during the spring 1999, 2000, and subsequent survey within 2 miles of the study corridor would be avoided using a 2-mile radius around each active lek from March 1 through May 15 (BLM 1984). However, NDOW or BLM may allow particular activities within the 2-mile avoidance radius (e.g. archaeological testing, survey staking, and environmental surveys). Activities within 2 miles of active leks should not take place 2 hours before dawn until 10:00 a.m. during those dates near active leks (BLM 1984). Restrictions for construction could be canceled, with appropriate resource agency (BLM, NDOW) concurrence, if pre-construction biological surveys indicate leks are inactive or are adequately screened by intervening topography/aspect (FERC 1995).

□ Mitigation Measure Special Status Species-7b (Perch Deterrents Along Sage Grouse Habitat)

SPPC would incorporate perch-deterrent design features on the transmission towers located within sage grouse nesting, brood-rearing, and wintering habitat and within 2 miles of active leks. SPPC would add special perch deterrent devices on tower crossarms (e.g., vertical steel plates) to discourage raptor and corvid perching in these areas. The tower design modifications would be

approved by the BLM. The nesting, brood-rearing, and wintering habitat areas would be based on BLM and NDOW documented habitat maps and field surveys completed by biologists qualified to identify the different types of habitat. Final boundaries of sage grouse habitats would be approved by the BLM and NDOW. Perch deterrents would not be required in areas that cannot be perch-protected (i.e., utility corridor along Segments I and J), instead, off-site mitigation would be required (see Mitigation Measure-7c below). Annual inspections would be conducted to ensure that the devices are still in place and functioning.

☐ *Mitigation Measure Special Status Species –7c (Off-site mitigation for Sage Grouse)*

In areas that cannot be perch-protected (i.e., the utility corridor along Segments I and J), off-site mitigation by retrofitting other lines selected by BLM or NDOW with either perch deterrents or flight diverters is recommended. Mitigation values would be determined using the following: miles of historic lek intercept of the 2-mile radius multiplied by average number of towers per mile would equal the number of towers to be retrofitted off-site (i.e. 28 miles of intercept X 4 towers/mile = 112 structures). In the case of retrofitting off-site lines with flight diverters, the multiplier would equal \$2,000/tower for funding the placement of bird flight diverters.

Should historic leks become active or new leks become established within line-of-sight of the towers along Segment J, the BLM would approach SPPC about installing perch deterrents on the subject structures owned by SPPC. Funds available from the mitigation account would be used; otherwise, other SPPC company funds may be available to install perch deterrents on a case-by-case basis.

☐ *Mitigation Measure Special Status Species –7d (Monitoring)*

To address the potential visual impact of the transmission line on sage grouse, SPPC would fund implementation of a study that would monitor selected leks and sage grouse habitat along the transmission line route to determine the effectiveness of anti-perch devices and to determine if transmission towers that have perch deterrents contribute to a negative effect on sage grouse in terms of habitat use and population stability. Such study would, at a minimum, monitor lek attendance and sage grouse movements and survival, and may also study the effects of the transmission line on raptor and raven movements. In essence, the study would seek to determine if the presence of towers with effective anti-perching devices cause lek decline or abandonment merely because of the visual intimidation of the towers. For this study, it is recommended that an institution such as University of Nevada be involved in the research design and participation. Funding from SPPC would be equal to \$450,000 and would be available to initiate and fund the study for the first years of research or as long as the funding is available. Additional funding sources may also be incorporated to expand or extend the study should the need be warranted.

Should a research-based approach to monitoring be infeasible, SPPC would fund a simplified study, which would monitor lek attendance at potentially affected leks along the transmission line using standard protocols. This lek attendance would then be compared to a selected set of existing NDOW “trend” leks. This type of study can help determine whether residual visual impacts of a transmission line remain after raptor and raven perching is mitigated. (This assumes that anti-perching measures are effective.)

This study would involve counting the number of sage grouse at leks. This data collection effort could be coordinated with other BLM and NDOW efforts. Monitoring would continue for a minimum of 10 years. Monitoring could extend beyond 10 years until consistent data reveals conclusions. If extended monitoring does not reveal conclusions, monitoring should not exceed 12 years.

The data collected would be prepared in a yearly report by SPPC and findings presented to the BLM and NDOW to include in their own monitoring database. The trend leks, agency coordination, monitoring protocols, and other details will be defined in the COM Plan.

If monitoring indicates that lek abandonment has occurred due to the visual impact or presence of the transmission line, SPPC would negotiate with BLM to provide off-site mitigation to improve and enhance sage grouse habitat. This off-site mitigation would be proportionate to the impacts associated with the affected active leks along the perch-deterred sections of the transmission line.

Ferruginous Hawks: Table 3.7-9 lists the ferruginous hawk nests identified during the spring 1999 survey. No significant adverse effects are expected to ferruginous hawks from electrocution or bird collisions as a result of the proposed transmission line. Studies have shown that electrocution and direct collisions of ferruginous hawks with transmission lines have not represented a significant mortality factor (Olendorff 1993). Although transmission lines along existing roads have increased the susceptibility of ferruginous hawks to shooting, this impact has been documented as minimal (Olendorff 1993).

TABLE 3.7-9: FERRUGINOUS HAWK NESTS SIGHTED ALONG THE STUDY CORRIDOR (SPRING 1999 DATA)

Number of Nests	Status and General Location of Nest	Segment
7	Occupied nests within 1 mile of the centerline	E, H
2	Occupied nests within 1-2 miles of the centerline	H, I
5	Probable occupied nests within 1 mile of the centerline	B, F, G
14	Inactive nests within 1 mile of the centerline	E, H, I
11	Inactive nests within 1-2 miles of the centerline	E, I
Total = 40		

Source: SEI 2000

Habitat fragmentation, as discussed under sage grouse, is a concern to all special-status species. For ferruginous hawks, potential habitat fragmentation may result from new roadways, which could potentially introduce a greater human presence in the landscape. There are numerous existing roads within the occupied hawk territories within the study corridor, indicating the hawks' potential tolerance to occasional activities. Twenty-six of the 40 documented ferruginous hawk nests have one or more roads within 0.5 mile of the nests. Of these 26, 20 have roads within 0.25 mile. SPPC has committed to restoration, where necessary, of any improved access roads and the reclamation of the centerline path; therefore, new access roads would not result from this project.

□ Impact Special-Status Species-8: Impact to Ferruginous Hawk Nests

Significant adverse effects could occur to nesting ferruginous hawks from implementation of the project. Ferruginous hawks are highly vulnerable to human disturbance near their nesting sites, particularly during courtship and incubation periods (Olendorff 1993). Nest abandonment as a result of these disturbances is common. Due to the proximity of the identified nests to the study corridor (e.g., in Segment B), construction and maintenance activities could result in nest and territory abandonment. Because ferruginous hawks use alternate nest sites and sometimes rotate amongst these sites over a period of several years, all nest locations are considered as suitable nesting habitat (Herron et al. 1985, Snyder and Snyder 1991). All nests located in the study corridor could be indirectly affected by noise from construction and maintenance activities, increased traffic, and increased human harassment as a result of increased human access to or

increased visibility of the nests. During construction activities, displacement of prey species utilized by ferruginous hawks may occur within the 500-foot study corridor during the nesting season and could preclude birds from foraging near those sites. However, the loss of potential foraging habitat would not be considered a significant impact because of the availability of prey in adjacent lands.

☐ *Mitigation Measure Special-Status Species-8*

SPPC would avoid any construction activities including access road improvements within a 0.5-mile radius from occupied ferruginous hawk nests during the nesting season, from March 15 through July 1 (BLM 1992). This spatial buffer zone during the nesting season represents the minimum area surrounding a nest that must be kept free of human intrusion to avoid harassment (Olendorff 1993). Avoidance of the early nesting period is critical because ferruginous hawks tend to abandon their nest if they are harassed (Olendorff 1993). Once the eggs have hatched, the adults are less likely to leave their nest (personal communication with Paul Grindrod, Hawk Watch International, May 2000). Trees containing ferruginous hawk nests would be avoided during construction activities. Ferruginous hawks would be allowed to initiate and complete their breeding activities at any potentially impacted nest (Olendorff 1993).

Ferruginous hawk nesting territories, as identified by NDOW, do not always contain hawk nests. Therefore, pre-construction surveys would be necessary along these identified territories. To avoid disturbance to previously undocumented ferruginous hawk nests, a qualified biologist, acceptable to NDOW and BLM, would conduct pre-construction surveys in identified nesting territories along the proposed line. If newly identified ferruginous hawk nests are found along the route alternative, SPPC would avoid any construction activities within a 0.5-mile radius from any ferruginous hawk nest during the nesting season, from March 15 through July 1 (BLM 1992). Occupied, inactive, or potentially occupied ferruginous hawk nests would not be removed during construction activities.

Road improvements associated with this project and the centerline travel route within 0.5 mile of ferruginous hawk nest would be reclaimed as outlined in Appendix E, Reclamation Plan and Section 3.4, Vegetation, Mitigation Measure Vegetation-4. Existing roads may need to be reclaimed within the 0.5 mile sphere as deemed necessary by BLM or NDOW as outlined in Section 3.6, Wildlife and Wildlife Habitat, Mitigation Measure Wildlife-4. No reclamation activities may occur during the hawks' nesting season, as stated above.

Potential mitigation measures for the increased access to ferruginous hawk nests would include revegetation of maintenance roads by SPPC after construction of the transmission line (refer to Section 3.4, Vegetation). Maintenance roads would be revegetated in a way that would not make them susceptible to human intrusion as described in Mitigation Measure Wildlife-4 (mitigation for indirect impacts on wildlife from increased human presence and access, see Section 3.6). SPPC would avoid routine maintenance activities during the nesting season, from March 15 through July 1 (BLM 1992) near the two highly concentrated nest areas (Segments E and H).

Special-Status Bats: If individual special-status bats are present along the route alternatives, these individuals could be impacted. Potential roosting habitat is present in areas where rock outcrops occur, in particular at Hercules Gap (along Segment J, which is common to all route alternatives) and along the K re-route.

☐ *Impact Special-Status Species-9: Impact to Roosting Bats*

According to bat biologist Rick Sherwin of the University of New Mexico (personal communication, July 19, 2000), assessing potential impacts to species that may roost anywhere is difficult to quantify given the difficulty of locating these species. The project does not

recommend placing towers on cliff faces or on top of outcrops, nor does the project propose to change those features in any way. However, the K re-route passes directly over a rock outcrop, and some blasting or drilling might occur near the rock outcrop at Hercules Gap on Segment J (Ruth Quad).

☐ *Mitigation Measure Special-Status Species-9*

To avoid disturbance to roosting bats that may occur in the project area, a qualified biologist, acceptable to NDOW and BLM, would conduct pre-construction surveys near the rock outcrops using night-vision goggles or binoculars. If roosting bats are detected at the site, no blasting or drilling activities would occur during maternity time, from June through August. If roosting bats are not present, construction activities may resume per BLM or NDOW's direction.

☐ *Impact Special-Status Species-10: Contractor Compliance with Environmental Issues*

Without proper training, contractors or their crews may not generally take special-status species and unique habitats into consideration during construction activities. So that mitigation measures detailed in this section and other sections may be understood and be followed more readily, the following mitigation measure is recommended.

☐ *Mitigation Measure Special-Status Species-10*

SPPC will conduct a Biological Resource Education Program for construction supervisors, managers, general foremen, and foremen and enforce construction restrictions before and during construction. Due to the high turnover rate associated with construction crews, general foremen and foremen will be required to keep track of and require training of all construction personnel under their supervision of the special-status species and other sensitive resources that may exist and their protection under the Endangered Species Act of 1973 (16 USC 1536). All educational programs will be conducted before construction personnel are allowed to work on the project. SPPC recommends a multi-hour environmental education and training session for foremen and above, and a less than one-hour training for the workers on the construction crews. This places the knowledge and responsibility with the leadership, and would require them to keep track of and train new project personnel under their supervision.) The program would also cover mitigation measures, environmental permits, and proposed project plans, such as a reclamation plan. SPPC and their environmental compliance inspector(s) would be responsible for ensuring that crew members adhere to the guidelines and restrictions. Additional education programs would be conducted as needed to inform appropriate new personnel brought on the job during the construction period.

Special-Status invertebrates (Mattoni's Blue Butterfly): The host plant for the larval stage of the Mattoni's Blue Butterfly is buckwheat (*Eriogonum Microthecum* var. *Laxiflorum*), which is a widely distributed plant species. Buckwheat occurs sporadically in the project area.

☐ *Impact Special-Status Species-11: Impact to Host Plant for Mattoni's Blue Butterfly*

Direct and indirect impacts to this species of butterfly could result from construction-related impacts to the host buckwheat plant where these populations occur. Because of the plant's widespread distribution, the impacts to these plants would be adverse but not significant. Implementing the following mitigation measure in conjunction with Mitigation Measure Special-Status Species-1 would help to minimize the impact further.

☐ *Mitigation Measure Special-Status Species-11*

To the extent practical, this buckwheat species should be protected from disturbance during construction where construction traffic can safely avoid them without impacting other sensitive resources (i.e., cultural resources or riparian areas). As outlined in Mitigation Measure Special-

Status Species-1, qualified biologists would locate populations and mark avoidance zones prior to construction.

Alternative-Specific Impacts

In addition to impacts common to route alternatives (as described above), the following sections address impacts that would be associated with specific route alternatives. Because each of the route alternatives differ by one or more segments, these alternative-specific impacts are best discussed in terms of their differentiating segments.

To assist the reader in understanding the spatial distribution of special-status species in the project area, Table 3.7-10 presents data for species occurrence by segment. As shown in the table, most segments include occurrences of two or three special-status species. Segment B includes the most, with five occurrences; there were no observations in Segment A. Also evident is that some species (e.g., Swainson's hawk, golden eagle, and pygmy rabbit) occur in only two segments, whereas other species (such as the sage grouse and ferruginous hawk) occur in most of the segments. Of particular interest, however, is that when segments are grouped by alternative, most of the route alternatives include observations of all of the nine special-status species discussed above (Table 3.7-11). The only exceptions are the Pine Valley route alternatives (which do not include golden eagle occurrences), and the Buck Mountain route alternative (which does not include Swainson's hawk or northern goshawk observations).

TABLE 3.7-10: SUMMARY OF SPECIES OCCURRENCE BY SEGMENT

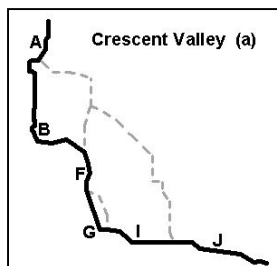
Species	Segment or Re-Route											
	A	B	C	D	E	F	G	H	I	J	K	L
Swainson's Hawk		X		X								
Golden Eagle		X			X							
Pygmy Rabbit					X					X		
Bat spp.										X	X	
Bald Eagle					X			X	X			
Northern Goshawk						X						
Sage Grouse		X	X	X	X	X	X			X		
Burrowing Owl		X	X	X								X
Ferruginous Hawk		X			X	X	X	X	X			

TABLE 3.7-11: SUMMARY OF SPECIES OCCURRENCE BY ROUTE ALTERNATIVE

Route Alternative	Swainson's Hawk	Golden Eagle	Pygmy Rabbit	Bat spp.	Bald Eagle	Northern Goshawk	Sage Grouse	Burrowing Owl	Ferruginous Hawk
Crescent Valley (a)	X	X	X	X	X	X	X	X	X
Crescent Valley (b)	X	X	X	X	X	X	X	X	X
Pine Valley (a)	X		X	X	X	X	X	X	X
Pine Valley (b)	X		X	X	X	X	X	X	X
Buck Mountain		X	X	X	X		X	X	X

Note that no significant impacts to special-status wildlife are expected along Segment A, because no active or historic sage grouse leks, nor special-status species nests or burrows, nor ferruginous hawk nesting territory were identified along this segment.

Crescent Valley (a) Route Alternative



Crescent Valley (a) includes Segments A, B, F, G, I, and J, as well as the K and L re-routes, which could be used to realign portions of Segment B around sensitive resources. All of the 9 special-status species identified under impacts common to alternatives potentially occur in Crescent Valley (a). Site-specific species occurrence and potential impacts are listed below by segment.

Segment B

Segment B includes potential habitat and documented species occurrence of Swainson's hawks, golden eagles, sage grouse, burrowing owls, and ferruginous hawks. As a large colony of burrowing owls was identified within 2.25 miles of Segment B, Mitigation Measure Special-Status Species-3 would apply.

Although Swainson's hawk nests were not found during the wildlife surveys, nesting in the study corridor is a possibility (SEI 2000). A single bird hunting from a perch on the ground in Segment B (Pete Hanson Creek Quad), less than 1.5 miles north of the centerline, was observed during field surveys, and another Swainson's was noted flying in the same area. Should Swainson's hawks be found nesting within one mile of Segment B then Mitigation Measure Special-Status Species-2 would apply.

One of the 3 golden eagle nests identified in the project area is located near Segment B – an inactive nest in a rock outcrop within one mile of the study corridor. To protect this nest from potential project-related impacts, if it becomes occupied, Mitigation Measure Special-Status Species-4 would apply.

Two potentially occupied ferruginous hawk nests were identified along Segment B and mapped within 1-2 miles of the centerline during the field surveys. Ferruginous hawks were identified in the west- and-east facing slopes of the southern end of the Cortez Mountains along Segment B, within 1 to 2 miles of the proposed centerline. At least one of these two ferruginous hawk nests could be removed during tree removal and trimming for the required line clearance and overland travel performed within the study corridor. To protect these potential nest locations from potential project-related impacts, should they become occupied, Mitigation Measure Special-Status Species-8 would apply.

Three active leks within 1 to 2 miles were identified along Segment B during the 1999 and 2000 surveys. However, the 2000 surveys indicated that the 1999 fires altered the habitat around the three leks located in 1999. In this area, only two leks were observed in 2000. A single male was sighted at Lek 17 but was not seen on a subsequent visit (Back 2000a). In addition, at least 7 historic leks were identified within 2 miles of Segment B. The BLM considers historic leks as potential suitable habitat (personal communication with Stamm, BLM, July 31, 2000).

However, some habitat characteristics are missing from historical leks (i.e., overgrown sagebrush, existing roads nearby). Therefore, these historic leks have not been active during at least the past 2 years. Impacts to active leks along Segment B would be considered significant and impacts to historic leks would be considered adverse, but could be mitigated by implementing the mitigation measures outlined under Mitigation Measure Special-Status Species-7b. Lek 17 is much higher in elevation than the proposed transmission line along Segment B. It is not likely that this location would create an advantage for raptors (Back 2000a).

Additionally, some of the active leks located along Segment B are situated within one of the wildfires of 1999 (Figure 3.4-1). The habitat surrounding these active leks (1999 - 6, 7, and 8) would require vegetative succession to return to suitable nesting and brooding habitat. Leks 14 and 15 (2000) were likely established because of the fire. Lek 15 is likely to be abandoned due to lack of suitable strutting and nesting habitat (Back 2000a).

Habitat fragmentation for migratory movements of sage grouse could occur along Segment B. Lek 17 might be impacted during winter movements when the grouse may move from higher elevations to lower elevations. Leks 14, 8, and 7, however, are less likely to have increased impacts as the heavily traveled Cortez Beowawe Road that runs east to west from Garden Valley to Grass Valley may already constitute fragmented habitat due to traffic loads and potential predator travel corridor. Lek 15 may be impacted during winter seasonal movements.

Access roads would not likely constitute a significant impact to these leks. The access roads are well established and heavily used roads. One exception is a two-track, located 0.5 mile from lek 6. Due to existing roads and lek locations, habitat fragmentation as a result of this project would not be considered a significant impact.

To mitigate potential impacts to the historic and active leks identified along Segment B and documented sage grouse seasonal habitat, Mitigation Measure Special-Status Species-7a, -7b, -7c, and -7d would apply.

Segment B could be realigned to incorporate the K and L re-routes to avoid sensitive resources identified during the field surveys. Both sage grouse and burrowing owls potentially occur in the L re-route. However, the K re-route contains potential habitat for bat species. Some blasting or drilling might occur along the K re-route (Cortez Canyon Quad), which traverses near and over numerous large rock outcrops in pinyon-juniper habitat. Such activities could disturb roosting bats. In particular, the K re-route is the only portion that passes directly over a rock outcrop; other portions of the study area may pass within one mile but do not traverse outcrops. To reduce potential impacts to roosting bats (as described under Impact Special-Status Species-9), SPPC would implement the Mitigation Measure Special-Status Species-9. Note, however, that the potential presence of bat species along the K re-route makes it less feasible compared to the L re-route.

Two burrowing owl burrows were identified on the L re-route. The existing Mule Canyon Road is heavily traveled by both Mule Canyon Mine employees in personal vehicles and by haul trucks. Therefore, any increase in traffic on the road due to construction of the project is short-term and is unlikely to adversely affect the burrowing owls. No mitigation measures would be necessary.

Sage grouse also occur on the L re-route; one active lek was identified within 2 miles of the L re-route during the 1999 and 2000 surveys. No historic leks were identified within 2 miles of the re-route. Impacts to the active lek and documented seasonal habitat along the L re-route would be considered significant but could be mitigated to a less-than-significant level by implementing Mitigation Measures Special-Status Species-7a, -7b, -7c, and -7d, described earlier.

Impact Special-Status Species-12: Long-term Impacts to Recovery Efforts for Lahontan Cutthroat Trout

Construction of this project could potentially affect future recovery efforts for the LCT in the Henderson Creek, if they are initiated in the future by wildlife agencies. The Crescent Valley (a) and (b) route alternatives would cross Henderson Creek along Segment B and again along Segment F. Long-term impacts, specifically filling of the channel and alteration of the bed

materials, could potentially occur if roads are constructed and transmission line towers placed within the floodplains of Henderson Creek and its tributaries. Additionally, if Henderson Creek is restored in the future, water quality could be potentially damaged by sediment and turbidity during SPPC's annual line inspections as the ATVs could cross watercourses and contribute sediments and degrade creek bank stability. Increased public access also could contribute to bank instability and sedimentation. While these impacts are not expected to significantly affect the recovery efforts for the LCT, SPPC would implement the following mitigation measure to minimize impacts.

❑ Mitigation Special-Status Species-12

Towers would be installed outside of creek channels, outside of the 100-year flood plain, or placed in such a manner as not to affect potential creek restoration efforts [i.e., outside and above (elevationally) relict channels]. Implementing Mitigation Measure Wildlife-4, centerline travel route reclamation, would preclude unauthorized vehicle use along the right-of-way where access roads and Henderson Creek are in close proximity. All vehicular crossing of Henderson Creek for annual line inspections and any needed maintenance would be by bridge or other authorized crossings. Implementation of these mitigation measures will ensure that the project would not adversely affect the LCT.

Segment F

Segment F, which is shared by the four Crescent Valley and Pine Valley route alternatives, includes potential habitat or documented species occurrence of both the sage grouse and northern goshawk. The only northern goshawk observed in the project area was sited in Segment F, less than 0.25 mile west of the centerline near a spring (in the Garden Pass Quad); as described earlier, the project area does not provide suitable habitat for this species, and the observed bird was likely a fly-over. No significant impacts to the northern goshawk are anticipated, and no mitigation measures are necessary.

Two active leks were identified within one mile of Segment F during the 1999 and 2000 surveys. However, Lek 18 was not visible from Segment F due to its location on a slope facing away from the transmission line, and Lek 5 is located on a bench above the transmission line corridor and may not be visible from the transmission line. It is not likely that this would create an advantage for raptors (Back 2000a). Therefore, no significant impacts are expected to Leks 5 and 18, which are active. Two were identified within 2 miles of Segment F. However, Mitigation Measure Special-Status-7b (Perch Deterrents) would be implemented throughout documented seasonal sage grouse habitat. Proposed access roads are located 0.7 mile and one mile, respectively, from the leks. Significant impacts resulting from construction-related road activity could occur but could be mitigated to a less-than-significant level by implementing Mitigation Measure Special-Status Species-7a. Segment F would cross Henderson Creek and thus could impact future recovery efforts for Lahontan Cutthroat Trout, as discussed above under Impact Special-Status Species-12.

Segment G

Segment G, which is part of both Crescent Valley (a) and Pine Valley (a), includes documented occurrences of two special-status species – sage grouse and the ferruginous hawk.

One active lek was identified 2.2 miles of Segment G during the 1999 and 2000 surveys. Impacts to sage grouse or their habitat may occur; therefore, implementing Mitigation Measure Special-Status Species-7b would lessen these impacts.

One potentially occupied ferruginous hawk nest could be affected during tree removal and trimming for the required line clearance and overland travel performed within the 500-foot study corridor. Due to the proximity of the identified nest to Segment G, construction and maintenance activities could result in nest and territory abandonment. The nest could be indirectly affected by noise from construction and

maintenance activities, increased traffic, and increased human harassment as a result of increased human access to or increased visibility of the nests (see Impact Special-Status Species-8). These impacts would be reduced to a less-than-significant level by implementing Mitigation Measure Special-Status Species-8.

Segment I

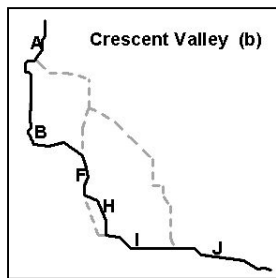
Segment I, shared by the four Crescent Valley and Pine Valley route alternatives, includes documented occurrences of the sage grouse and ferruginous hawk; bald eagles may also occur in the vicinity.

No active leks were identified along Segment I during the 1999 and 2000 surveys (Back 2000a). Therefore, no significant impacts to currently active sage grouse leks are expected along Segment I. At least 8 historic leks were identified within 2 miles of Segment I. Impacts to these historic leks along Segment I would be considered adverse, but could be mitigated to a less-than-significant level by implementing Mitigation Measure Special-Status Species-7b, discussed above under impacts common to all route alternatives.

Three ferruginous hawk nests, both occupied and inactive, were identified and mapped within 2 miles of Segment I during the field surveys. Significant adverse effects could occur to nesting ferruginous hawks from implementation of the project; general construction activities, noise, and blasting may adversely affect some of these nests. This species is vulnerable to increased activities near their nesting sites (Olendorff 1993), as described under Impact Special-Status Species-8. Such impacts would be mitigated to a less-than-significant level by implementing Mitigation Measure Special-Status Species-8, discussed above under impacts common to route alternatives.

Wintering bald eagles potentially occur in the vicinity of Segment I; according to NDOW (Herron et al. 1985), the study corridor traverses traditional wintering areas along the western edge of Diamond Valley. As described under Impact Special-Status Species-6, the study corridor falls on the edge of the mapped areas and adverse impacts to wintering bald eagles are not anticipated; no mitigation is required. Neither bald eagles nor potential roost sites were located in the study corridor during the surveys.

Crescent Valley (b) Route Alternative



The Crescent Valley (b) route alternative is comprised of Segments A, B, F, H, I, and J (and possibly the K and L re-routes). It follows a nearly identical alignment with the Crescent Valley (a) route, except that it uses Segment H rather than Segment G, traversing the east side of Whistler Mountain rather than the west. The Crescent Valley (b) route shares the impacts common to route alternatives (i.e., Impact Special-Status Species-1 through -11) and the impacts associated with Crescent Valley (a) route, except it would avoid impacts associated with Segment G, as described above. Impacts associated with Segment H are described below.

Segment H

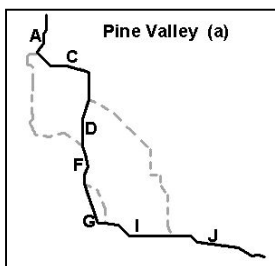
Segment H, which is shared by Crescent Valley (b) and Pine Valley (b), includes occurrences of the sage grouse and ferruginous hawk; in addition, bald eagles may occur in the vicinity.

No active leks were identified along Segment H during the 1999 and 2000 surveys (Back 2000a). Therefore, no significant impacts to currently active sage grouse leks are expected along Segment H. At least four historic leks were identified within 2 miles of Segment H. Impacts to documented sage grouse seasonal habitat would be considered adverse but could be mitigated by implementing Mitigation Measure Special-Status Species-7b.

Large concentrations of ferruginous hawks were identified in the east-facing slope of the Whistler Mountains near Segment H within 2 miles of the proposed centerline. At least 11 ferruginous hawk nests, including occupied, inactive, and potentially occupied nests, were identified and mapped within 2 miles of Segment H during the field surveys. These nests are located in one of the two largest ferruginous hawk nesting territory areas identified by NDOW resource staff. Of these 11 nests, at least two could be removed during tree removal and trimming for the required line clearance and overland travel performed within the 500-foot study corridor. The rest of the nests located along Segment H would be indirectly affected. As described under Impact Special-Status Species-8, ferruginous hawks are highly vulnerable to human disturbance near their nesting sites. In addition, all nests located in the study corridor could be indirectly affected by noise from construction and maintenance activities, increased traffic, and increased human harassment as a result of increased human access to or increased visibility of the nests. Adverse impacts to occupied ferruginous hawk nests would be avoided by implementing Mitigation Measure Special-Status Species-8.

Wintering bald eagles potentially occur in the vicinity of Segment H; according to NDOW (Herron et al. 1985), the study corridor traverses traditional wintering areas along the western edge of Diamond Valley near the base of Whistler Mountain. As described under Impact Special-Status Species-6, the study corridor falls on the edge of the mapped areas and adverse impacts to wintering bald eagles are not anticipated; no mitigation is required. Neither bald eagles nor potential roost sites were located in the study corridor during the surveys.

Pine Valley (a) Route Alternative



The Pine Valley (a) route alternative is comprised of Segments A, C, D, F, G, I, and J. It follows a similar alignment to the Crescent Valley (a) route, except that it uses Segments C and D instead of Segment B. In addition to the impacts common to all route alternatives described previously (i.e., Impact Special-Status Species-1 through -11), the Pine Valley (a) route would involve impacts described above for Segments A, F, G, I, and J (including the potential impacts to Lahontan Cutthroat Trout on Segment F discussed in Impact Special-Status Species-12). Impacts associated with Segments C and D are

described below.

Note that there are no documented observations of the golden eagles or nests in either of the Pine Valley route alternative study corridors.

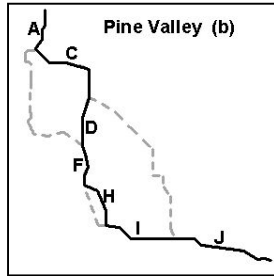
Segment C

Segment C, which is shared by both Pine Valley route alternatives as well as Buck Mountain, includes occurrences of the sage grouse and burrowing owl. Four burrowing owl burrows were identified within one mile of Segment C. Potential impacts to burrowing owls and their burrows are described above under Impact Special-Status Species-3. Impacts would be mitigated to a less-than-significant level by implementing Mitigation Measure Special-Status Species-3.

Seven active leks within 1 to 5 miles of the centerline were identified along Segment C during the 1999 and 2000 surveys. However, leks 1 and 16 along Segment C would not be visible from the location and approximate height of the transmission support structures due to topographic features. It is not likely that this would create an advantage for raptors (Back 2000a). Potential habitat fragmentation is more likely for these two leks but should be considered for all the leks along Segment C. The transmission line would be aligned so that seasonal habitats, specifically winter habitats, are substantially bisected. Highway 278 lies over 3 miles to the east beyond the proposed transmission line, and few other roads are located in the area. Leks 2, 3, 4, 11, and 12 are located more than 3 miles away from Segment C; therefore, no significant impacts are expected to affect these active leks. Proposed access roads are not

anticipated to significantly impact these leks. Access roads are located from approximately 2.25 miles to over 4 miles from the leks. One historic lek was located within 2 miles of Segment C. Impacts to the historic lek would be considered adverse, but could be mitigated by implementing Mitigation Measure Special-Status Species-7b. Potential impacts to active leks would be mitigated by implementing Mitigation Measure Special-Status Species-7a, -7b, -7c, and -7d.

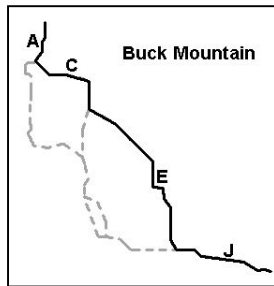
Pine Valley (b) Route Alternative



The Pine Valley (b) route alternative is comprised of Segments A, C, D, F, H, I, and J. It follows a nearly identical alignment with the Pine Valley (a) route, except that Pine Valley (b) uses Segment H rather than Segment G, traversing the eastern side of Whistler Mountain rather than the west. The Pine Valley (b) route alternative would have largely the same impacts as Pine Valley (a) route, except for the effects identified above for Segment G. In addition, it would include the impacts associated with Segment H, as discussed above for the Crescent Valley (b) route alternative.

Note that there were no documented observations of the golden eagles or nests in the Pine Valley (b) route alternative study corridor.

Buck Mountain Route Alternative



The Buck Mountain route alternative is comprised of Segments A, C, E, and J. It shares the impacts common to route alternatives (i.e., Impact Special-Status Species-1 through -11), as well as the impacts associated with Segment C (as described above for Pine Valley (a)). Buck Mountain is the only route that uses Segment E, as described below.

Note that Buck Mountain is the only route alternative where the Swainson's hawk and northern goshawk were not observed or documented.

Segment E

Segment E includes observations of the golden eagle, pygmy rabbit, bald eagle, sage grouse, and ferruginous hawk. Two occupied golden eagle nests were identified within one mile of Segment E during the field surveys. Golden eagles may be displaced and abandon their nests as a result of construction activities along the study corridor. This impact is considered significant but could be mitigated to a less-than-significant level by implementing Mitigation Measure Special-Status Species-4, as discussed under impacts common to route alternatives.

In total, four active sage grouse leks within 1 to 2 miles were identified along Segment E during the 1999 and 2000 surveys. The presence of the transmission line could potentially fragment habitat. Fewer roads are found in this area and the transmission line is located equidistant from seasonal habitats. Movement to summer habitat may impact Lek 9 more significantly than the other leks. Existing access roads that could be used during construction range from hosting an active lek to being 0.75 mile from an active lek. Leks 13 and 14 are either located within a roadway or directly adjacent to a roadway. These two leks could potentially receive unmitigable impacts if any access road improvements occur. In addition, at least 4 historic leks were identified within 2 miles of Segment E. Potential impacts to documented sage grouse seasonal habitat may be lessened by implementing the Mitigation Measure Special-Status Species-7b. Impacts to active leks along Segment E would be considered significant, but could be mitigated to less than significant by implementing the mitigation measure below.

❑ **Mitigation Measure Special-Status Species-7e**

Significant impacts to Leks 13 and 14 may be mitigated by using different access roads or by not improving the roadways. For additional mitigation, see Mitigation Measure Special-Status Species-7a and -7b.

Large concentrations of ferruginous hawks were identified in the west-facing slopes of the White Pine Range and Dry Mountain along Segment E within 2 miles of the proposed centerline. At least 19 ferruginous hawk nests, including active and inactive nests, were identified and mapped within 2 miles of Segment E during the field surveys. These nests are located in one of the two largest ferruginous hawk nesting territory areas identified by NDOW resource staff. Of these 19 ferruginous hawk nests, at least seven could be removed during tree removal and trimming for the required line clearance and overland travel performed within the study corridor. The rest of the nests located along Segment E would be indirectly affected. As described under Impact Special-Status Species-8, ferruginous hawks are highly vulnerable to human disturbance near their nesting sites. In addition, all nests located in the study corridor could be indirectly affected by noise from construction and maintenance activities, increased traffic, and increased human harassment as a result of increased human access to or increased visibility of the nests. Adverse impacts to occupied ferruginous hawk nests would be avoided by implementing Mitigation Measure Special-Status Species-8.

Segment E is one of the two segments with documented pygmy rabbit burrows. The one pygmy rabbit burrow along Segment E was identified within one mile of the centerline. Potential impacts to the rabbits in those burrows could occur as a result of increased human activities along the study corridor, as described under Impact Special-Status Species-5. Although the identified pygmy rabbit burrow is located far away (i.e., within one mile from the centerline), it could be adversely impacted from increased traffic during construction. Impacts to pygmy rabbits and their burrows would be reduced to a less-than-significant level by implementing Mitigation Measure Special-Status Species-5, described under impacts common to route alternatives.

Wintering bald eagles potentially occur in the vicinity of Segment E; according to NDOW (Herron et al. 1985), the study corridor traverses traditional wintering areas along the northernmost reaches of Diamond Valley for approximately 3 miles (Sadler Basin and Garcia Flat Quads). In Newark Valley, which encompasses Newark Lake, the study corridor traverses mapped habitat north of Buck Pass for approximately 7 miles (Mooney Basin Summit and Cold Creek Ranch Quads). As described under Impact Special-Status Species-6, the study corridor falls on the edge of the mapped areas and adverse impacts to wintering bald eagles are not anticipated; no mitigation is required. Neither bald eagles nor potential roost sites were located in the study corridor during the surveys.

Summary Comparison of Route Alternatives

TABLE 3.7-12: SUMMARY OF IMPACTS BY ROUTE ALTERNATIVE

Impact	Crescent Valley (a)	Crescent Valley (b)	Pine Valley (a)	Pine Valley (b)	Buck Mountain
Impact Special-Status Species-1: Possible Disturbance of Special-Status Plants	X	X	X	X	X
Impact Special-Status Species-2: Potential Impacts to Swainson's Hawks	X	X	X	X	
Impact Special-Status Species-3: Impact to Burrowing Owl Burrows	X	X	X	X	X
Impact Special-Status Species-4: Impact to Golden Eagle Nests	X	X			X

Impact Special-Status Species-5: Impact to Pygmy Rabbit Burrows	X	X	X	X	X
Impact Special-Status Species-6: Potential Impact to Bald Eagles	X	X	X	X	X
Impact Special-Status Species-7: Impacts to Sage Grouse	X	X	X	X	X
Impact Special-Status Species-8: Impact to Ferruginous Hawk Nests	X	X	X	X	X
Impact Special-Status Species-9: Impact to Roosting Bats	X	X	X	X	X
Impact Special-Status Species-10: Contractor Compliance with Environmental Issues	X	X	X	X	X
Impact Special-Status Species-11: Impact to Host Plant for Mattoni's Blue Butterfly	X	X	X	X	X
Impact Special-Status Species-12: Long-term Impacts to Recovery Efforts for Lahontan Cutthroat Trout	X	X	X	X	

RESIDUAL IMPACTS

After mitigation residual impacts would be minor. However, as with wildlife and wildlife habitat discussed in Section 3.6, residual effects to special-status species and their habitat would result from temporary habitat loss, displacement of wildlife, and habitat fragmentation. After restoration, these impacts would be minimal. Based on existing conditions (such as number of road crossings, active mining claims, and private property), habitat fragmentation could potentially occur on Segments C, E, and G. Even after mitigation, the potential for habitat fragmentation does exist in landscapes that do not currently have numerous roads or other land-based activities, such as mines and exploration projects.

NO ACTION ALTERNATIVE

Under the No Action Alternative, impacts to existing special-status species and their habitat associated with this project would not occur. However, special-status species impacts could occur in other areas as SPPC and the Nevada PUC would begin emergency planning efforts to pursue other transmission and/or generation projects to meet the projected energy shortfall.